

# 放射線利用統計

STATISTICS  
ON  
THE USE OF RADIATION  
IN  
JAPAN

**2008**

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# 凡 例

## 統計の範囲

この統計は、「放射性同位元素等による放射線障害の防止に関する法律（昭和32年6月10日法律第167号）」（施行：昭和33年4月1日。以下、放射線障害防止法という）の規定にもとづいて、放射性同位元素または放射線発生装置の使用を文部科学大臣に許可された事業所および1個または1式あたりの放射能が下限数量の1,000倍以下の密封された放射性同位元素のみの使用を文部科学大臣に届け出た事業所および表示付認証機器の使用を届け出た事業所を対象としたものである。

ただし、廃棄物処理に関する統計については、診療用放射性同位元素の使用に係るものも含んでいる。

なお、1、2章に掲げる利用状況等は、文部科学省で公開されているデータである。また、3、4、5章に掲げる供給量等は社団法人日本アイソトープ協会が供給・集荷した数量である。

## 用語

### 1．使用許可・届出事業所及び認証機器届出事業所：

放射線障害防止法の規定にもとづいて、放射性同位元素または放射線発生装置の使用を文部科学大臣に許可された事業所（許可事業所）および1個または1式あたりの放射能が下限数量の1,000倍以下の密封された放射性同位元素のみの使用を文部科学大臣に届け出た事業所（届出事業所）および表示付認証機器の使用を届け出た事業所（表示付認証機器届出事業所）。

### 2．販売・賃貸事業所：

放射線障害防止法の規定にもとづいて、放射性同位元素を業として販売または賃貸することを文部科学大臣に届け出た事業所。

### 3．医療機関：

医療法にもとづく病院および診療所  
（教育機関および民間企業の附属病院ならびに診療所を含む）。

### 4．教育機関：

学校教育法にもとづく学校（大学にあってはその学部）。大学の附属病院および附属研究所・試験所・研究施設等を除く。

### 5．研究機関：

国立、独立行政法人、公立、特殊法人、公益法人等の研究所および試験所ならびに教育機関または民間企業の附属研究所・試験所・研究施設。

### 6．民間企業：

民間の工場および作業場。附属研究所・試験所・研究施設ならびに附属病院を除く。

### 7．その他の機関：上記3．、4．、5．および6．の分類に属さない事業所。

### 8．集計期間：平成19年4月1日から平成20年3月31日の間とする。

- 9． 非          ：密封されていない放射性同位元素  
10． 密          ：密封された放射性同位元素  
11． 発          ：放射線発生装置

## 記号

- 計数零の場合。

・ 統計項目のない場合。

0.0 数または比率が微小（0.05未満）の場合。

# Explanatory notes

## Coverage of Statistics

This booklet presents the statistical data on the establishments which have been permitted by the Minister of Education, Culture, Sports, Science and Technology ( hereinafter called the Minister ) to use radioisotopes and/or radiation generators, and the establishments which have reported to and have been accepted by the Minister to use only sealed radioisotopes that's the quantity is not more than one thousand times of the exemption level for each kind of radioisotopes in one piece (or one set or one unit in normal use), the establishments which have reported by the Minister to use only approved devices with certification labels, as provided by the Law Concerning Prevention from Radiation Hazards due to Radioisotopes, etc. (Law No.167, June 10, 1957), hereinafter called the Law.

For summing up the quantities of radioactive waste collected for disposal, however, the radiopharmaceuticals for diagnostic and therapeutic uses are included also.

Following figures/utilizations of radiation in Chapter 1 • 2 are statistics published from the Minister.

Figures/amounts in Chapter 3 • 4 • 5 are statistics of distributed radioisotopes and collected radioactive waste which has been done by Japan Radioisotope Association.

## Terms and Abbreviations

### 1. Users:

The establishments which have been permitted by the Minister to use radioisotopes or radiation generators (designated as "permitted users") and the establishments that have reported to and have been accepted by the Minister to use only sealed radioisotopes which is the quantity one thousand times of the exemption level for each kind of radioisotopes in one piece (or one set or one unit for normal use) ("reported users"), and have reported by the Minister to use only approved devices with certification labels, ("notifying user of the approved devices with certification labels", hereinafter called notifies).

### 2. Dealers and Lessors:

The establishments have been accepted by the Minister to deal with or rent radioisotopes or instruments containing radioisotopes as provided by the Law.

### 3. Hospitals and Clinics:

Hospitals attached to educational organizations and industrial companies are included.

### 4. Educational Organizations:

Faculties of universities, colleges and high schools. Their attached hospitals and research institutions are excluded.

### 5. Research Institutions:

Research institutions attached to educational organizations and industrial companies are included.

### 6. Industrial Firms:

Factories and works.

### 7. Other Organizations:

Organizations other than those falling under the above-mentioned 3., 4., 5. and 6.

### 8. Fiscal Year:

From April 1, 2007 to March 31, 2008

### 9. US : Unsealed radioisotopes

### 10. S : Sealed radioisotopes

### 11. G : Radiation generators

## Symbols

The following symbols are used in the tables

Nil

• Class or item not applicable

0.0 Figure less than 0.05

## Districts and Prefectures

The following serial number is given to each district and prefecture.

|     |                      |     |                            |
|-----|----------------------|-----|----------------------------|
| 100 | HOKKAIDO             | 500 | KINKI DISTRICT             |
| 200 | TOHOKU DISTRICT      | 501 | Mie Prefecture             |
| 201 | Aomori Prefecture    | 502 | Shiga Prefecture           |
| 202 | Iwate Prefecture     | 503 | Kyoto Prefecture           |
| 203 | Miyagi Prefecture    | 504 | Osaka Prefecture           |
| 204 | Akita Prefecture     | 505 | Hyogo Prefecture           |
| 205 | Yamagata Prefecture  | 506 | Nara Prefecture            |
| 206 | Fukushima Prefecture | 507 | Wakayama Prefecture        |
| 300 | KANTO DISTRICT       | 600 | CHUGOKU & SHIKOKU DISTRICT |
| 301 | Ibaraki Prefecture   | 601 | Tottori Prefecture         |
| 302 | Tochigi Prefecture   | 602 | Shimane Prefecture         |
| 303 | Gunma Prefecture     | 603 | Okayama Prefecture         |
| 304 | Saitama Prefecture   | 604 | Hiroshima Prefecture       |
| 305 | Chiba Prefecture     | 605 | Yamaguchi Prefecture       |
| 306 | Tokyo                | 606 | Tokushima Prefecture       |
| 307 | Kanagawa Prefecture  | 607 | Kagawa Prefecture          |
| 400 | CHUBU DISTRICT       | 608 | Ehime Prefecture           |
| 401 | Niigata Prefecture   | 609 | Kochi Prefecture           |
| 402 | Toyama Prefecture    | 700 | KYUSHU DISTRICT            |
| 403 | Ishikawa Prefecture  | 701 | Fukuoka Prefecture         |
| 404 | Fukui Prefecture     | 702 | Saga Prefecture            |
| 405 | Yamanashi Prefecture | 703 | Nagasaki Prefecture        |
| 406 | Nagano Prefecture    | 704 | Kumamoto Prefecture        |
| 407 | Gifu Prefecture      | 705 | Oita Prefecture            |
| 408 | Shizuoka Prefecture  | 706 | Miyazaki Prefecture        |
| 409 | Aichi Prefecture     | 707 | Kagoshima Prefecture       |
|     |                      | 708 | Okinawa Prefecture         |

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# 1 概 況 GENERAL ASPECTS

## 1.1 使用許可・届出事業所数, 販売・賃貸事業所数 Number of Users, Dealers and Lessors

### 1.1.1 使用許可・届出事業所数\*の推移(機関別, 年度別)

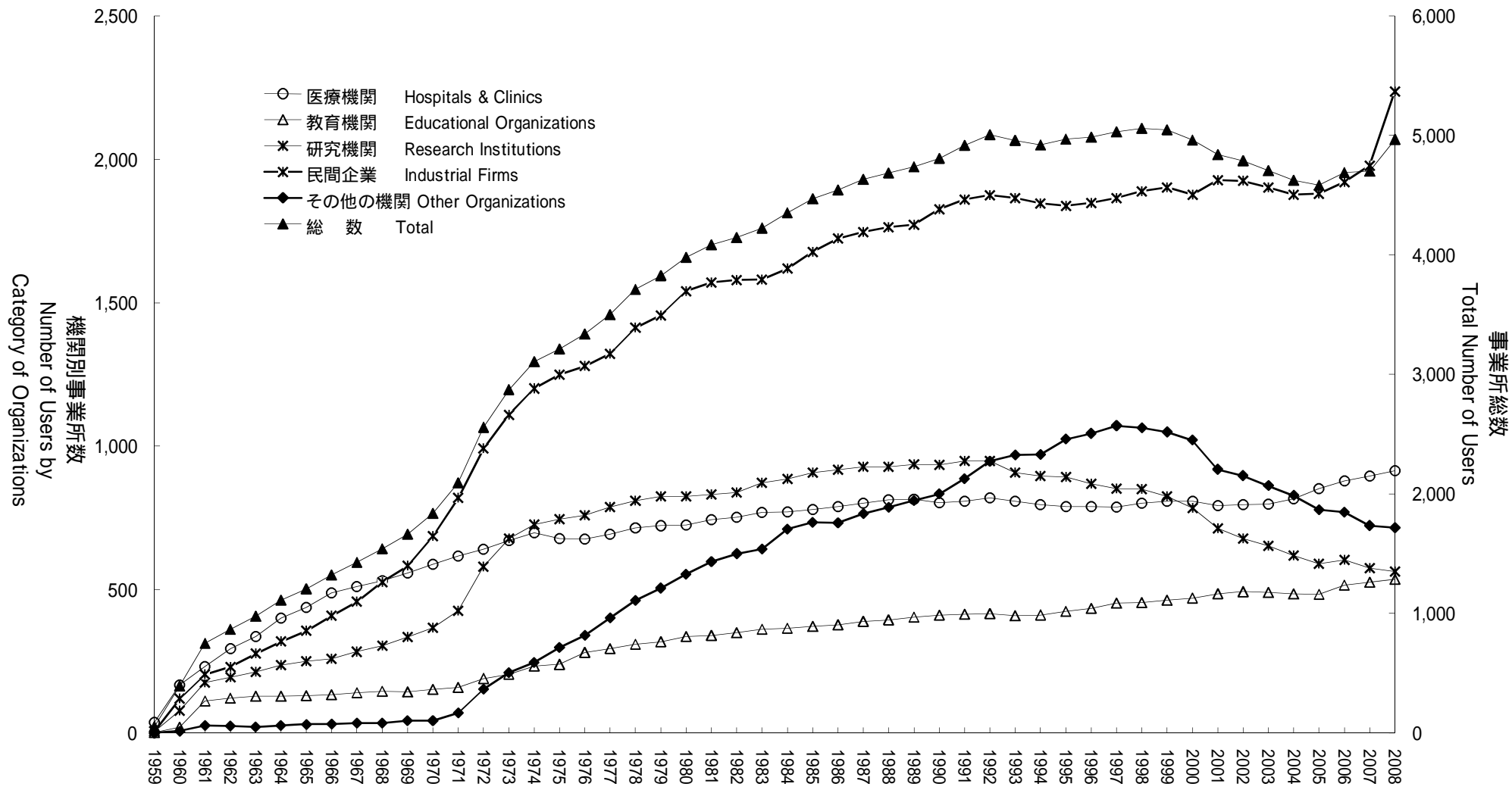
Changes with the Year in the Number of Users by Category of Organizations and License  
(as of March 31 of Each Year from 1999 to 2008)

| 機関<br>Category                       | 年月<br>Year | Mar.<br>1999 | Mar.<br>2000 | Mar.<br>2001 | Mar.<br>2002 | Mar.<br>2003 | Mar.<br>2004 | Mar.<br>2005 | Mar.<br>2006 | Mar.<br>2007 | Mar.<br>2008 | 構成比<br>Ratio(%) |
|--------------------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|
| <b>総 数</b><br>Total                  |            | 5,046        | 4,960        | 4,837        | 4,788        | 4,704        | 4,625        | 4,583        | 4,689        | 4,699        | 4,966        | 100%            |
| 許 可<br>Permitted                     |            | 2,562        | 2,526        | 2,475        | 2,473        | 2,432        | 2,429        | 2,468        | 2,548        | 2,528        | 2,526        |                 |
| 届 出<br>Reported<br>&Notifies         |            | 2,484        | 2,434        | 2,362        | 2,315        | 2,272        | 2,196        | 2,115        | 2,141        | 2,171        | 2,440        |                 |
| 医 療 機 関<br>Hospitals&Clinics         |            | 808          | 808          | 793          | 797          | 798          | 817          | 852          | 879          | 897          | 915          | 18.4            |
| 許 可<br>Permitted                     |            | 780          | 783          | 772          | 778          | 780          | 804          | 839          | 859          | 868          | 889          |                 |
| 届 出<br>Reported<br>&Notifies         |            | 28           | 25           | 21           | 19           | 18           | 13           | 13           | 20           | 29           | 26           |                 |
| 教 育 機 関<br>Educational Organizations |            | 462          | 470          | 485          | 492          | 489          | 484          | 483          | 515          | 525          | 535          | 10.8            |
| 許 可<br>Permitted                     |            | 342          | 342          | 361          | 367          | 364          | 364          | 373          | 381          | 381          | 376          |                 |
| 届 出<br>Reported<br>&Notifies         |            | 120          | 128          | 124          | 125          | 125          | 120          | 110          | 134          | 144          | 159          |                 |
| 研 究 機 関<br>Research Institutions     |            | 825          | 784          | 713          | 677          | 653          | 619          | 590          | 604          | 575          | 563          | 11.3            |
| 許 可<br>Permitted                     |            | 467          | 446          | 409          | 392          | 373          | 354          | 346          | 325          | 315          | 303          |                 |
| 届 出<br>Reported<br>&Notifies         |            | 358          | 338          | 304          | 285          | 280          | 265          | 244          | 279          | 260          | 260          |                 |
| 民 間 企 業<br>Industrial Firms          |            | 1,902        | 1,877        | 1,927        | 1,925        | 1,902        | 1,877        | 1,880        | 1,921        | 1,979        | 2,237        | 45.0            |
| 許 可<br>Permitted                     |            | 896          | 884          | 866          | 862          | 836          | 827          | 828          | 892          | 881          | 877          |                 |
| 届 出<br>Reported<br>&Notifies         |            | 1,006        | 993          | 1,061        | 1,063        | 1,066        | 1,050        | 1,052        | 1,029        | 1,098        | 1,360        |                 |
| そ の 他 の 機 関<br>Other Organizations   |            | 1,049        | 1,021        | 919          | 897          | 862          | 828          | 778          | 770          | 723          | 716          | 14.4            |
| 許 可<br>Permitted                     |            | 77           | 71           | 67           | 74           | 79           | 80           | 82           | 91           | 83           | 81           |                 |
| 届 出<br>Reported<br>&Notifies         |            | 972          | 950          | 852          | 823          | 783          | 748          | 696          | 679          | 640          | 635          |                 |

\*表示付認証機器届出事業所を含む

\*Number of Users are included notifying users of the approved devices with certification labels.

図1 使用許可・届出事業所数の年度推移  
 Fig.1 Changes with the Year in the Number of Users



## 1.1.2 使用許可・届出事業所数\*の推移(都道府県別, 年度別)

Changes with the Year in the Number of Users by Prefecture  
(as of March 31 of Each Year from 1999 to 2008)

| 都道府県<br>Prefecture |       | 年月<br>Year | Mar.<br>1999 | Mar.<br>2000 | Mar.<br>2001 | Mar.<br>2002 | Mar.<br>2003 | Mar.<br>2004 | Mar.<br>2005 | Mar.<br>2006 | Mar.<br>2007 | Mar.<br>2008 | 構成比<br>Ratio(%) |
|--------------------|-------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|
|                    |       |            |              |              |              |              |              |              |              |              |              |              |                 |
| 全 国<br>Total       |       |            | 5,046        | 4,960        | 4,837        | 4,788        | 4,704        | 4,625        | 4,583        | 4,689        | 4,699        | 4,966        | 100%            |
| 100                | 北 海 道 |            | 193          | 196          | 195          | 193          | 189          | 190          | 187          | 190          | 192          | 201          | 4.0             |
| 201                | 青 森   |            | 55           | 55           | 48           | 48           | 47           | 46           | 48           | 49           | 49           | 53           | 1.1             |
| 202                | 岩 手   |            | 42           | 41           | 38           | 36           | 36           | 36           | 38           | 38           | 40           | 38           | 0.8             |
| 203                | 宮 城   |            | 87           | 89           | 87           | 82           | 78           | 80           | 76           | 84           | 85           | 85           | 1.7             |
| 204                | 秋 田   |            | 37           | 36           | 37           | 37           | 38           | 36           | 36           | 38           | 40           | 41           | 0.8             |
| 205                | 山 形   |            | 50           | 46           | 47           | 47           | 47           | 48           | 46           | 45           | 46           | 46           | 0.9             |
| 206                | 福 島   |            | 95           | 92           | 93           | 91           | 91           | 83           | 83           | 83           | 83           | 91           | 1.8             |
| 301                | 茨 城   | 城          | 250          | 249          | 244          | 236          | 240          | 233          | 230          | 247          | 246          | 260          | 5.2             |
| 302                | 栃 木   | 木          | 81           | 81           | 80           | 78           | 83           | 82           | 75           | 75           | 76           | 79           | 1.6             |
| 303                | 群 馬   | 馬          | 65           | 66           | 68           | 70           | 69           | 67           | 64           | 66           | 64           | 66           | 1.3             |
| 304                | 埼 玉   | 玉          | 207          | 209          | 197          | 192          | 187          | 185          | 184          | 185          | 181          | 187          | 3.8             |
| 305                | 千 葉   | 葉          | 220          | 212          | 209          | 212          | 205          | 203          | 194          | 209          | 198          | 214          | 4.3             |
| 306                | 東 京   | 京          | 468          | 452          | 429          | 418          | 406          | 394          | 399          | 419          | 423          | 461          | 9.3             |
| 307                | 神 奈 川 | 川          | 365          | 353          | 340          | 336          | 329          | 320          | 312          | 314          | 324          | 345          | 6.9             |
| 401                | 新 潟   | 潟          | 96           | 92           | 89           | 90           | 89           | 89           | 88           | 90           | 88           | 94           | 1.9             |
| 402                | 富 山   | 山          | 59           | 62           | 60           | 60           | 59           | 58           | 57           | 58           | 62           | 67           | 1.3             |
| 403                | 石 川   | 川          | 42           | 44           | 45           | 45           | 45           | 44           | 45           | 44           | 47           | 49           | 1.0             |
| 404                | 福 井   | 井          | 46           | 46           | 42           | 43           | 43           | 42           | 42           | 42           | 43           | 43           | 0.9             |
| 405                | 山 梨   | 梨          | 31           | 32           | 31           | 32           | 33           | 31           | 32           | 32           | 32           | 35           | 0.7             |
| 406                | 長 野   | 野          | 101          | 98           | 98           | 96           | 99           | 95           | 89           | 90           | 89           | 89           | 1.8             |
| 407                | 岐 阜   | 阜          | 71           | 69           | 68           | 67           | 66           | 68           | 65           | 69           | 70           | 74           | 1.5             |
| 408                | 静 岡   | 岡          | 207          | 202          | 196          | 195          | 190          | 188          | 185          | 186          | 180          | 195          | 3.9             |
| 409                | 愛 知   | 知          | 259          | 251          | 248          | 249          | 252          | 248          | 243          | 254          | 250          | 265          | 5.3             |
| 501                | 三 重   | 重          | 75           | 74           | 75           | 75           | 75           | 71           | 74           | 79           | 78           | 83           | 1.7             |
| 502                | 滋 賀   | 賀          | 89           | 91           | 89           | 87           | 87           | 83           | 86           | 84           | 80           | 84           | 1.7             |
| 503                | 京 都   | 都          | 116          | 116          | 114          | 107          | 101          | 100          | 106          | 107          | 105          | 108          | 2.2             |
| 504                | 大 阪   | 阪          | 392          | 385          | 369          | 356          | 337          | 333          | 324          | 324          | 330          | 360          | 7.2             |
| 505                | 兵 庫   | 庫          | 233          | 229          | 226          | 218          | 215          | 211          | 216          | 214          | 220          | 226          | 4.6             |
| 506                | 奈 良   | 良          | 34           | 34           | 32           | 32           | 30           | 30           | 32           | 32           | 30           | 31           | 0.6             |
| 507                | 和 歌 山 | 山          | 37           | 34           | 35           | 36           | 35           | 31           | 34           | 33           | 34           | 35           | 0.7             |
| 601                | 鳥 取   | 取          | 27           | 29           | 28           | 28           | 26           | 26           | 28           | 30           | 29           | 29           | 0.6             |
| 602                | 島 根   | 根          | 26           | 25           | 26           | 26           | 27           | 26           | 27           | 26           | 27           | 30           | 0.6             |
| 603                | 岡 山   | 山          | 90           | 87           | 88           | 91           | 87           | 89           | 88           | 88           | 89           | 91           | 1.8             |
| 604                | 広 島   | 島          | 131          | 129          | 126          | 127          | 127          | 118          | 119          | 122          | 123          | 129          | 2.6             |
| 605                | 山 口   | 口          | 96           | 89           | 88           | 87           | 81           | 76           | 74           | 72           | 76           | 73           | 1.5             |
| 606                | 徳 島   | 島          | 46           | 44           | 43           | 46           | 48           | 50           | 46           | 45           | 46           | 49           | 1.0             |
| 607                | 香 川   | 川          | 40           | 40           | 38           | 42           | 41           | 42           | 41           | 42           | 41           | 45           | 0.9             |
| 608                | 愛 媛   | 媛          | 76           | 74           | 75           | 77           | 72           | 72           | 66           | 70           | 68           | 68           | 1.4             |
| 609                | 高 知   | 知          | 29           | 26           | 28           | 29           | 28           | 28           | 27           | 28           | 28           | 28           | 0.6             |
| 701                | 福 岡   | 岡          | 140          | 137          | 130          | 134          | 131          | 135          | 139          | 139          | 136          | 147          | 3.0             |
| 702                | 佐 賀   | 賀          | 29           | 28           | 25           | 26           | 26           | 27           | 26           | 29           | 27           | 29           | 0.6             |
| 703                | 長 崎   | 崎          | 33           | 34           | 35           | 35           | 35           | 35           | 35           | 34           | 35           | 40           | 0.8             |
| 704                | 熊 本   | 本          | 49           | 50           | 50           | 48           | 48           | 51           | 55           | 55           | 57           | 58           | 1.2             |
| 705                | 大 宮   | 宮          | 35           | 35           | 33           | 33           | 33           | 31           | 32           | 34           | 35           | 38           | 0.8             |
| 706                | 宮 崎   | 崎          | 33           | 33           | 32           | 31           | 27           | 27           | 27           | 27           | 27           | 35           | 0.7             |
| 707                | 鹿 児 島 | 島          | 39           | 38           | 37           | 37           | 38           | 39           | 37           | 37           | 39           | 40           | 0.8             |
| 708                | 沖 縄   | 縄          | 24           | 26           | 26           | 27           | 28           | 28           | 26           | 31           | 31           | 32           | 0.6             |

\*表示付認証機器届出事業所を含む

\*Number of Users are included notifying users of the approved devices with certification labels.

## 1.1.3 使用許可・届出事業所\*の地域分布(都道府県別,機関別)

Geographical Distribution of Users by Category of Organizations and by License(as of March 31,2008)

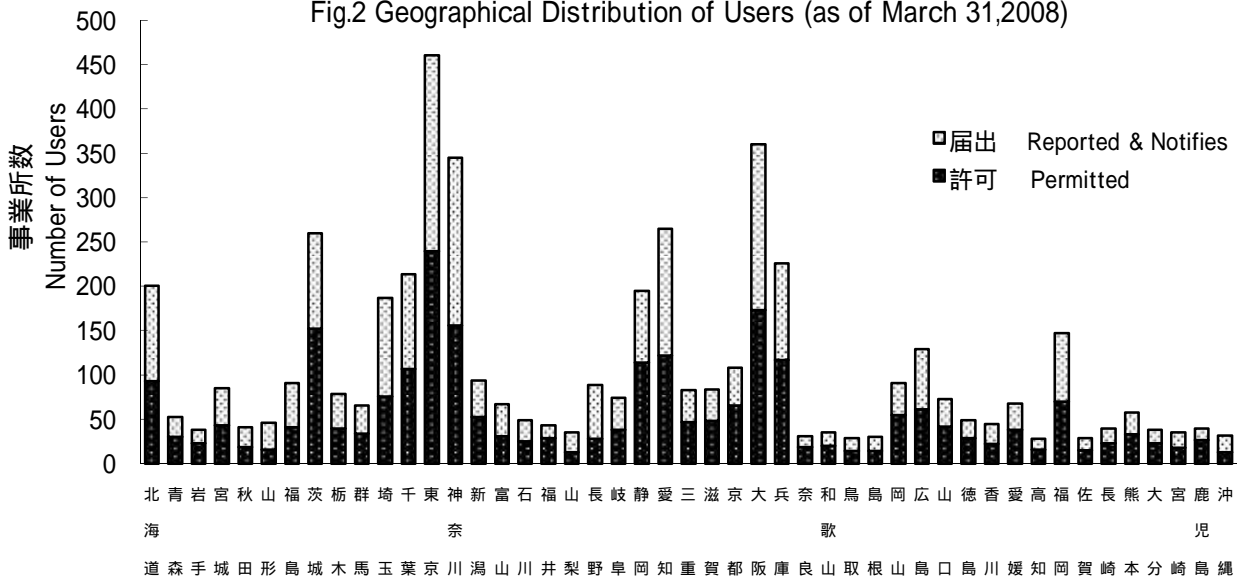
| 機関<br>Category     | 総数<br>Total     |                     |                               | 医療機関<br>Hospitals<br>& Clinics |                     |                               | 教育機関<br>Educational<br>Organizations |                     |                               | 研究機関<br>Research<br>Institutions |                     |                               | 民間企業<br>Industrial Firms |                     |                               | その他<br>Other<br>Organizations |                     |                               |
|--------------------|-----------------|---------------------|-------------------------------|--------------------------------|---------------------|-------------------------------|--------------------------------------|---------------------|-------------------------------|----------------------------------|---------------------|-------------------------------|--------------------------|---------------------|-------------------------------|-------------------------------|---------------------|-------------------------------|
|                    | 総<br>数<br>Total | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified | 総<br>数<br>Total                | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified | 総<br>数<br>Total                      | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified | 総<br>数<br>Total                  | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified | 総<br>数<br>Total          | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified | 総<br>数<br>Total               | 可<br>許<br>Permitted | 届<br>出<br>Reported & Notified |
| 都道府県<br>Prefecture |                 |                     |                               |                                |                     |                               |                                      |                     |                               |                                  |                     |                               |                          |                     |                               |                               |                     |                               |
| 全 国<br>Total       | 4,966           | 2,526               | 2,440                         | 915                            | 889                 | 26                            | 535                                  | 376                 | 159                           | 563                              | 303                 | 260                           | 2,237                    | 877                 | 1,360                         | 716                           | 81                  | 635                           |
| 100 北 海 道          | 201             | 93                  | 108                           | 38                             | 38                  | -                             | 29                                   | 19                  | 10                            | 14                               | 5                   | 9                             | 70                       | 22                  | 48                            | 50                            | 9                   | 41                            |
| 201 青 森            | 53              | 30                  | 23                            | 13                             | 13                  | -                             | 5                                    | 4                   | 1                             | 7                                | 4                   | 3                             | 17                       | 6                   | 11                            | 11                            | 3                   | 8                             |
| 202 岩 手            | 38              | 23                  | 15                            | 11                             | 11                  | -                             | 3                                    | 3                   | -                             | 2                                | 1                   | 1                             | 16                       | 7                   | 9                             | 6                             | 1                   | 5                             |
| 203 宮 城            | 85              | 43                  | 42                            | 19                             | 17                  | 2                             | 16                                   | 9                   | 7                             | 12                               | 6                   | 6                             | 18                       | 7                   | 11                            | 20                            | 4                   | 16                            |
| 204 秋 田            | 41              | 19                  | 22                            | 10                             | 10                  | -                             | 4                                    | 3                   | 1                             | 1                                | 1                   | -                             | 18                       | 5                   | 13                            | 8                             | -                   | 8                             |
| 205 山 形            | 46              | 16                  | 30                            | 9                              | 9                   | -                             | 4                                    | 3                   | 1                             | 3                                | -                   | 3                             | 17                       | 3                   | 14                            | 13                            | 1                   | 12                            |
| 206 福 島            | 91              | 41                  | 50                            | 12                             | 12                  | -                             | 5                                    | 2                   | 3                             | 5                                | 3                   | 2                             | 54                       | 24                  | 30                            | 15                            | -                   | 15                            |
| 301 茨 城            | 260             | 152                 | 108                           | 20                             | 20                  | -                             | 11                                   | 5                   | 6                             | 93                               | 65                  | 28                            | 118                      | 59                  | 59                            | 18                            | 3                   | 15                            |
| 302 栃 木            | 79              | 40                  | 39                            | 11                             | 11                  | -                             | 6                                    | 5                   | 1                             | 7                                | 4                   | 3                             | 46                       | 19                  | 27                            | 9                             | 1                   | 8                             |
| 303 群 馬            | 66              | 34                  | 32                            | 16                             | 15                  | 1                             | 3                                    | 2                   | 1                             | 7                                | 4                   | 3                             | 32                       | 11                  | 21                            | 8                             | 2                   | 6                             |
| 304 埼 玉            | 187             | 76                  | 111                           | 26                             | 26                  | -                             | 12                                   | 6                   | 6                             | 22                               | 9                   | 13                            | 102                      | 33                  | 69                            | 25                            | 2                   | 23                            |
| 305 千 葉            | 214             | 107                 | 107                           | 26                             | 26                  | -                             | 25                                   | 19                  | 6                             | 27                               | 5                   | 22                            | 118                      | 54                  | 64                            | 18                            | 3                   | 15                            |
| 306 東 京            | 461             | 240                 | 221                           | 96                             | 92                  | 4                             | 82                                   | 61                  | 21                            | 67                               | 42                  | 25                            | 153                      | 35                  | 118                           | 63                            | 10                  | 53                            |
| 307 神 奈 川          | 345             | 156                 | 189                           | 48                             | 46                  | 2                             | 33                                   | 26                  | 7                             | 48                               | 31                  | 17                            | 167                      | 51                  | 116                           | 49                            | 2                   | 47                            |
| 401 新 潟            | 94              | 53                  | 41                            | 17                             | 17                  | -                             | 12                                   | 10                  | 2                             | 6                                | 2                   | 4                             | 41                       | 21                  | 20                            | 18                            | 3                   | 15                            |
| 402 富 山            | 67              | 31                  | 36                            | 12                             | 11                  | 1                             | 6                                    | 4                   | 2                             | 4                                | 2                   | 2                             | 36                       | 14                  | 22                            | 9                             | -                   | 9                             |
| 403 石 川            | 49              | 25                  | 24                            | 13                             | 11                  | 2                             | 5                                    | 5                   | -                             | 4                                | 2                   | 2                             | 19                       | 7                   | 12                            | 8                             | -                   | 8                             |
| 404 福 井            | 43              | 29                  | 14                            | 7                              | 7                   | -                             | 4                                    | 3                   | 1                             | 6                                | 4                   | 2                             | 23                       | 15                  | 8                             | 3                             | -                   | 3                             |
| 405 山 梨            | 35              | 13                  | 22                            | 6                              | 6                   | -                             | 3                                    | 3                   | -                             | 2                                | -                   | 2                             | 16                       | 4                   | 12                            | 8                             | -                   | 8                             |
| 406 長 野            | 89              | 28                  | 61                            | 17                             | 17                  | -                             | 6                                    | 3                   | 3                             | 5                                | 2                   | 3                             | 36                       | 6                   | 30                            | 25                            | -                   | 25                            |
| 407 岐 阜            | 74              | 38                  | 36                            | 13                             | 11                  | 2                             | 5                                    | 4                   | 1                             | 6                                | 3                   | 3                             | 40                       | 19                  | 21                            | 10                            | 1                   | 9                             |
| 408 静 岡            | 195             | 114                 | 81                            | 33                             | 32                  | 1                             | 9                                    | 6                   | 3                             | 14                               | 9                   | 5                             | 115                      | 63                  | 52                            | 24                            | 4                   | 20                            |
| 409 愛 知            | 265             | 122                 | 143                           | 50                             | 47                  | 3                             | 32                                   | 20                  | 12                            | 23                               | 10                  | 13                            | 129                      | 42                  | 87                            | 31                            | 3                   | 28                            |
| 501 三 重            | 83              | 47                  | 36                            | 15                             | 15                  | -                             | 4                                    | 3                   | 1                             | 7                                | 4                   | 3                             | 45                       | 23                  | 22                            | 12                            | 2                   | 10                            |
| 502 滋 賀            | 84              | 48                  | 36                            | 12                             | 12                  | -                             | 7                                    | 4                   | 3                             | 10                               | 4                   | 6                             | 45                       | 27                  | 18                            | 10                            | 1                   | 9                             |
| 503 京 都            | 108             | 66                  | 42                            | 22                             | 22                  | -                             | 18                                   | 16                  | 2                             | 23                               | 14                  | 9                             | 39                       | 13                  | 26                            | 6                             | 1                   | 5                             |
| 504 大 阪            | 360             | 173                 | 187                           | 72                             | 68                  | 4                             | 34                                   | 27                  | 7                             | 39                               | 24                  | 15                            | 171                      | 52                  | 119                           | 44                            | 2                   | 42                            |
| 505 兵 庫            | 226             | 117                 | 109                           | 40                             | 38                  | 2                             | 16                                   | 12                  | 4                             | 20                               | 12                  | 8                             | 122                      | 50                  | 72                            | 28                            | 5                   | 23                            |
| 506 奈 良            | 31              | 19                  | 12                            | 9                              | 9                   | -                             | 7                                    | 6                   | 1                             | 3                                | 1                   | 2                             | 6                        | 3                   | 3                             | 6                             | -                   | 6                             |
| 507 和 歌 山          | 35              | 20                  | 15                            | 11                             | 11                  | -                             | 2                                    | 2                   | -                             | 2                                | -                   | 2                             | 15                       | 7                   | 8                             | 5                             | -                   | 5                             |
| 601 鳥 取            | 29              | 14                  | 15                            | 7                              | 7                   | -                             | 3                                    | 3                   | -                             | 3                                | -                   | 3                             | 9                        | 4                   | 5                             | 7                             | -                   | 7                             |
| 602 島 根            | 30              | 14                  | 16                            | 6                              | 6                   | -                             | 4                                    | 2                   | 2                             | 3                                | 1                   | 2                             | 12                       | 5                   | 7                             | 5                             | -                   | 5                             |
| 603 岡 山            | 91              | 55                  | 36                            | 13                             | 13                  | -                             | 13                                   | 10                  | 3                             | 5                                | 4                   | 1                             | 44                       | 27                  | 17                            | 16                            | 1                   | 15                            |
| 604 広 島            | 129             | 61                  | 68                            | 21                             | 20                  | 1                             | 18                                   | 10                  | 8                             | 9                                | 5                   | 4                             | 61                       | 25                  | 36                            | 20                            | 1                   | 19                            |
| 605 山 口            | 73              | 42                  | 31                            | 16                             | 16                  | -                             | 5                                    | 2                   | 3                             | 4                                | 1                   | 3                             | 38                       | 21                  | 17                            | 10                            | 2                   | 8                             |
| 606 徳 島            | 49              | 29                  | 20                            | 5                              | 5                   | -                             | 8                                    | 6                   | 2                             | 5                                | 4                   | 1                             | 26                       | 14                  | 12                            | 5                             | -                   | 5                             |
| 607 香 川            | 45              | 22                  | 23                            | 10                             | 9                   | 1                             | 4                                    | 3                   | 1                             | 6                                | 2                   | 4                             | 19                       | 8                   | 11                            | 6                             | -                   | 6                             |
| 608 愛 媛            | 68              | 38                  | 30                            | 13                             | 13                  | -                             | 8                                    | 4                   | 4                             | 5                                | 1                   | 4                             | 36                       | 20                  | 16                            | 6                             | -                   | 6                             |
| 609 高 知            | 28              | 16                  | 12                            | 6                              | 6                   | -                             | 6                                    | 5                   | 1                             | 1                                | -                   | 1                             | 10                       | 5                   | 5                             | 5                             | -                   | 5                             |
| 701 福 岡            | 147             | 70                  | 77                            | 32                             | 32                  | -                             | 22                                   | 14                  | 8                             | 11                               | 4                   | 7                             | 57                       | 13                  | 44                            | 25                            | 7                   | 18                            |
| 702 佐 賀            | 29              | 15                  | 14                            | 6                              | 6                   | -                             | 2                                    | 2                   | -                             | 5                                | 2                   | 3                             | 7                        | 3                   | 4                             | 9                             | 2                   | 7                             |
| 703 長 崎            | 40              | 23                  | 17                            | 10                             | 10                  | -                             | 6                                    | 5                   | 1                             | 3                                | -                   | 3                             | 14                       | 8                   | 6                             | 7                             | -                   | 7                             |
| 704 熊 本            | 58              | 33                  | 25                            | 16                             | 16                  | -                             | 13                                   | 6                   | 7                             | 6                                | 4                   | 2                             | 16                       | 5                   | 11                            | 7                             | 2                   | 5                             |
| 705 大 分            | 38              | 23                  | 15                            | 13                             | 13                  | -                             | 2                                    | 1                   | 1                             | 2                                | 1                   | 1                             | 14                       | 8                   | 6                             | 7                             | -                   | 7                             |
| 706 宮 崎            | 35              | 18                  | 17                            | 10                             | 10                  | -                             | 4                                    | 2                   | 2                             | 2                                | -                   | 2                             | 16                       | 6                   | 10                            | 3                             | -                   | 3                             |
| 707 鹿 児 島          | 40              | 27                  | 13                            | 18                             | 18                  | -                             | 4                                    | 3                   | 1                             | 2                                | 1                   | 1                             | 7                        | 3                   | 4                             | 9                             | 2                   | 7                             |
| 708 沖 縄            | 32              | 13                  | 19                            | 9                              | 9                   | -                             | 5                                    | 3                   | 2                             | 2                                | -                   | 2                             | 7                        | -                   | 7                             | 9                             | 1                   | 8                             |

\*表示付認証機器届出事業所を含む

\*Number of Users are included notifying users of the approved devices with certification labels.

図2 使用許可・届出事業所の地域分布

Fig.2 Geographical Distribution of Users (as of March 31,2008)



1.1.4 使用許可・届出事業所数\* (機関別, 利用形態別)

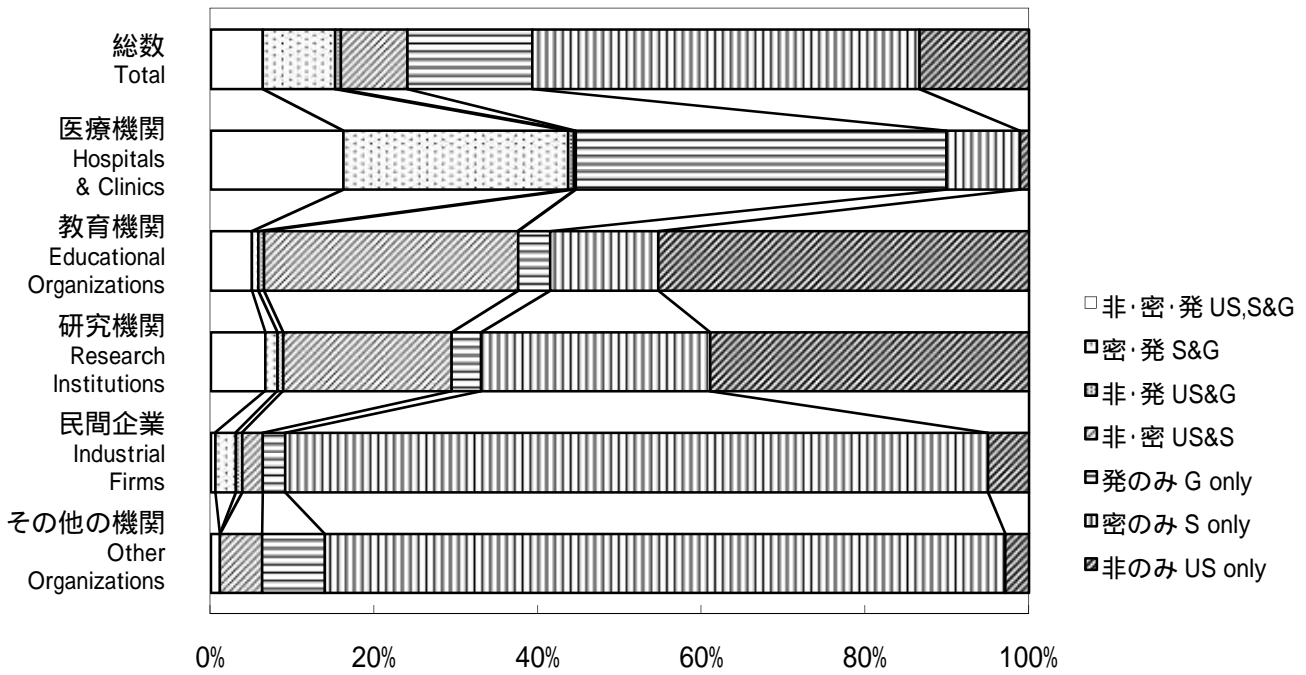
Number of Users by Category of Organizations and by Usage (as of March 31,2008)

| 機関<br>Category          | 利用形態<br>Usage   | 総数<br>Total  | 非のみ<br>US only | 密のみ<br>S only | 発のみ<br>G only | 非・密<br>US&S | 非・発<br>US&G | 密・発<br>S&G | 非・密・発<br>US,S&G | 延べ計        |              |              | Total |
|-------------------------|-----------------|--------------|----------------|---------------|---------------|-------------|-------------|------------|-----------------|------------|--------------|--------------|-------|
|                         |                 |              |                |               |               |             |             |            |                 | 非<br>US    | 密<br>S       | 発<br>G       |       |
| <b>総数</b>               | <b>Total</b>    | <b>3,138</b> | <b>423</b>     | <b>1,442</b>  | <b>503</b>    | <b>245</b>  | <b>24</b>   | <b>288</b> | <b>213</b>      | <b>905</b> | <b>2,188</b> | <b>1,028</b> |       |
| <b>構成比</b>              | <b>Ratio(%)</b> | <b>100%</b>  | <b>13.5</b>    | <b>46.0</b>   | <b>16.0</b>   | <b>7.8</b>  | <b>0.8</b>  | <b>9.2</b> | <b>6.8</b>      |            |              |              |       |
| 医療機関<br>&Clinics        | Hospitals       | 910          | 10             | 72            | 418           | 2           | 7           | 249        | 152             | 171        | 475          | 826          |       |
| 教育機関<br>Organizations   | Educational     | 406          | 185            | 56            | 15            | 122         | 4           | 3          | 21              | 332        | 202          | 43           |       |
| 研究機関<br>Institutions    | Research        | 403          | 157            | 114           | 17            | 77          | 3           | 5          | 30              | 267        | 226          | 55           |       |
| 民間企業<br>Firms           | Industrial      | 1,175        | 63             | 1,001         | 33            | 31          | 10          | 31         | 6               | 110        | 1,069        | 80           |       |
| その他の機関<br>Organizations | Other           | 244          | 8              | 199           | 20            | 13          | -           | -          | 4               | 25         | 216          | 24           |       |

\*表示付認証機器届出事業所は含まれていない

\*Number of Users are not included notifying users of the approved devices with certification labels.

図3 使用許可・届出事業所の利用形態  
Fig.3 Usage of Radiation (as of March 31,2008)



1.1.5 販売・賃貸事業所数の推移(年度別)

Changes with the Number of Dealers and Lessors (as of March 31 of Each Year from 2002 to 2008)

| 業種<br>Kind of business | 年月<br>Year | Mar.<br>2002 | Mar.<br>2003 | Mar.<br>2004 | Mar.<br>2005 | Mar.<br>2006 | Mar.<br>2007 | Mar.<br>2008 |
|------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 販売業<br>Dealers         |            | 152          | 130          | 127          | 123          | 144          | 168          | 219          |
| 賃貸業<br>Lessors         |            | 2            | 2            | 2            | 2            | 2            | 6            | 87           |

## 1.2 利用状況 Utilization of Radioisotopes and Radiation Generators

### 1.2.1 おもな密封アイソトープの使用許可・届出事業所数\* (核種別, 機関別) Number of Users of Major Sealed Radioisotopes by Category of Organizations (as of March 31,2008)

| 核種<br>Major Nuclides | 機関<br>Category | 総数<br>Total | 構成比**<br>ratio(%) | 医療機関<br>Hospitals<br>&Clinics | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|----------------------|----------------|-------------|-------------------|-------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| <sup>3</sup> H       |                | 58          | 2.7               | 1                             | 1                                    | 9                                | 24                          | 23                               |
| <sup>14</sup> C      |                | 3           | 0.1               | -                             | -                                    | 1                                | 2                           | -                                |
| <sup>22</sup> Na     |                | 45          | 2.1               | 18                            | 8                                    | 16                               | 3                           | -                                |
| <sup>55</sup> Fe     |                | 44          | 2.0               | -                             | 7                                    | 9                                | 28                          | -                                |
| <sup>57</sup> Co     |                | 98          | 4.5               | 1                             | 61                                   | 26                               | 10                          | -                                |
| <sup>60</sup> Co     |                | 407         | 18.6              | 135                           | 42                                   | 39                               | 178                         | 13                               |
| <sup>63</sup> Ni     |                | 683         | 31.2              | 2                             | 75                                   | 151                              | 308                         | 147                              |
| <sup>68</sup> Ge     |                | 232         | 10.6              | 207                           | 5                                    | 11                               | 6                           | 3                                |
| <sup>85</sup> Kr     |                | 302         | 13.8              | -                             | -                                    | 8                                | 292                         | 2                                |
| <sup>90</sup> Sr     |                | 192         | 8.8               | 55                            | 25                                   | 14                               | 96                          | 2                                |
| <sup>109</sup> Cd    |                | 24          | 1.1               | -                             | 5                                    | 2                                | 17                          | -                                |
| <sup>119m</sup> Sn   |                | 39          | 1.8               | -                             | 22                                   | 14                               | 3                           | -                                |
| <sup>124</sup> Sb/Be |                | 20          | 0.9               | -                             | -                                    | 6                                | 14                          | -                                |
| <sup>125</sup> I     |                | 110         | 5.0               | 96                            | 3                                    | 6                                | 5                           | -                                |
| <sup>133</sup> Ba    |                | 13          | 0.6               | 1                             | 4                                    | 4                                | 4                           | -                                |
| <sup>137</sup> Cs    |                | 520         | 23.8              | 154                           | 58                                   | 57                               | 211                         | 40                               |
| <sup>147</sup> Pm    |                | 116         | 5.3               | -                             | 2                                    | 7                                | 107                         | -                                |
| <sup>151</sup> Sm    |                | 29          | 1.3               | -                             | 16                                   | 11                               | 2                           | -                                |
| <sup>153</sup> Gd    |                | 12          | 0.5               | 8                             | -                                    | 1                                | 3                           | -                                |
| <sup>170</sup> Tm    |                | 5           | 0.2               | -                             | 1                                    | 1                                | 2                           | 1                                |
| <sup>192</sup> Ir    |                | 244         | 11.2              | 136                           | 7                                    | 4                                | 96                          | 1                                |
| <sup>198</sup> Au    |                | 48          | 2.2               | 46                            | -                                    | 1                                | 1                           | -                                |
| <sup>204</sup> Tl    |                | 11          | 0.5               | -                             | 1                                    | 5                                | 5                           | -                                |
| <sup>210</sup> Po    |                | 13          | 0.6               | -                             | 2                                    | 2                                | 9                           | -                                |
| <sup>226</sup> Ra    |                | 57          | 2.6               | 11                            | 12                                   | 20                               | 10                          | 4                                |
| <sup>241</sup> Am    |                | 211         | 9.6               | 2                             | 24                                   | 19                               | 164                         | 2                                |
| <sup>241</sup> Am/Be |                | 74          | 3.4               | -                             | 18                                   | 24                               | 29                          | 3                                |
| <sup>244</sup> Cm    |                | 16          | 0.7               | -                             | -                                    | 5                                | 11                          | -                                |
| <sup>252</sup> Cf    |                | 62          | 2.8               | -                             | 10                                   | 20                               | 29                          | 3                                |
| Others               |                | 47          | 2.1               | 1                             | 13                                   | 18                               | 15                          | -                                |

\*表示付認証機器届出事業所は含まれていない

\*\* 密封アイソトープ使用事業所数2,188(表1.1.4延べ計参照)に対する比

\*Number of Users are not included notifying users of the approved devices with certification labels.

\*\* Ratio to the total number of users (2,188) of sealed radioisotopes. (See Table 1.1.4)



## 1.2.2 非破壊検査装置およびおもな装備機器の使用許可・届出台数\* (機器の種類別, 核種別)

Number of  $\gamma$ -Ray Radiography Apparatus and Major Isotope Gauges in Use by Nuclide (as of March 31, 2008)

| 機器<br>Appa-<br>ratus<br>核種<br>Nuclides | 総数<br>Total | 構成比<br>(Ratio%) | 非破壊<br>検査装置<br>Radio-<br>graphy | 厚さ計<br>Thickness<br>Gauges | レベル計<br>Level<br>Gauges | 密度計<br>Density<br>Gauges | 水分計<br>Moisture<br>Gauges | 蛍光X線<br>分析装置<br>X-ray<br>Fluorescence<br>Spectromete | スラブ<br>位置<br>検出器<br>Slab<br>Position<br>Detector | ガス<br>クロマト<br>グラフ<br>Gas<br>Chromato<br>-graph | 硫黄<br>分析計<br>Sulfur<br>Meters | たばこ<br>量目<br>制御装置<br>Cigarette<br>Weight<br>controller | 静電除去<br>装置<br>Electric<br>Static<br>Eliminator | ガス<br>検知器<br>Gas<br>Detector | その他<br>Others |
|--|-------------|-----------------|---------------------------------|----------------------------|-------------------------|--------------------------|---------------------------|--|--|--|-------------------------------|--|--|------------------------------|---------------|
| 総数<br>Total                            | 12,801      | 100%            | 955                             | 2,495                      | 1,143                   | 465                      | 69                        | 71   | 22   | 2,371  | 140                           | 177  | 24   | 56                           | 4,813         |
| $^3\text{H}$                           | 1,881       | 14.7            | -                               | -                          | -                       | -                        | -                         | -  | -  | 12   | -                             | -  | -  | -                            | 1,869         |
| $^{55}\text{Fe}$                       | 72          | 0.6             | -                               | 6                          | -                       | -                        | -                         | 39   | -  | -  | 1                             | -  | -  | -                            | 26            |
| $^{57}\text{Co}$                       | 334         | 2.6             | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 334           |
| $^{60}\text{Co}$                       | 718         | 5.6             | 139                             | -                          | 347                     | 3                        | -                         | -  | 19   | -  | -                             | -  | -  | -                            | 210           |
| $^{63}\text{Ni}$                       | 2,462       | 19.2            | -                               | -                          | -                       | -                        | -                         | -  | -  | 2,359  | -                             | -  | -  | 56                           | 47            |
| $^{68}\text{Ge}$                       | 35          | 0.3             | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 35            |
| $^{85}\text{Kr}$                       | 1,396       | 10.9            | -                               | 1,353                      | -                       | 7                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 36            |
| $^{90}\text{Sr}$                       | 353         | 2.8             | -                               | 173                        | -                       | 3                        | -                         | -  | -  | -  | -                             | 177  | -  | -                            | -             |
| $^{119\text{m}}\text{Sn}$              | 76          | 0.6             | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 76            |
| $^{137}\text{Cs}$                      | 1,421       | 11.1            | 20                              | 75                         | 794                     | 172                      | -                         | -  | 3  | -  | -                             | -  | -  | -                            | 357           |
| $^{147}\text{Pm}$                      | 289         | 2.3             | -                               | 255                        | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 34            |
| $^{153}\text{Gd}$                      | 7           | 0.1             | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | 7             |
| $^{170}\text{Tm}$                      | -           | -               | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | -             |
| $^{192}\text{Ir}$                      | 667         | 5.2             | 667                             | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | -             |
| $^{204}\text{Tl}$                      | -           | -               | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | -  | -                            | -             |
| $^{210}\text{Po}$                      | 21          | 0.2             | -                               | -                          | -                       | -                        | -                         | -  | -  | -  | -                             | -  | 13   | -                            | 8             |
| $^{241}\text{Am}$                      | 1,786       | 14.0            | 3                               | 624                        | 2                       | 280                      | 1                         | 6  | -  | -  | 139                           | -  | -  | -                            | 731           |
| $^{241}\text{Am}/\text{Be}$            | 59          | 0.5             | -                               | -                          | -                       | -                        | 59                        | -  | -  | -  | -                             | -  | -  | -                            | -             |
| $^{252}\text{Cf}$                      | 4           | 0.0             | -                               | -                          | -                       | -                        | 4                         | -  | -  | -  | -                             | -  | -  | -                            | -             |
| Others                                 | 1,220       | 9.5             | 126                             | 9                          | -                       | -                        | 5                         | 26   | -  | -  | -                             | -  | 11   | -                            | 1,043         |

\*表示付認証機器は含まれていない

\*Number of Major Isotope Gauges are not included the approved devices with certification labels.

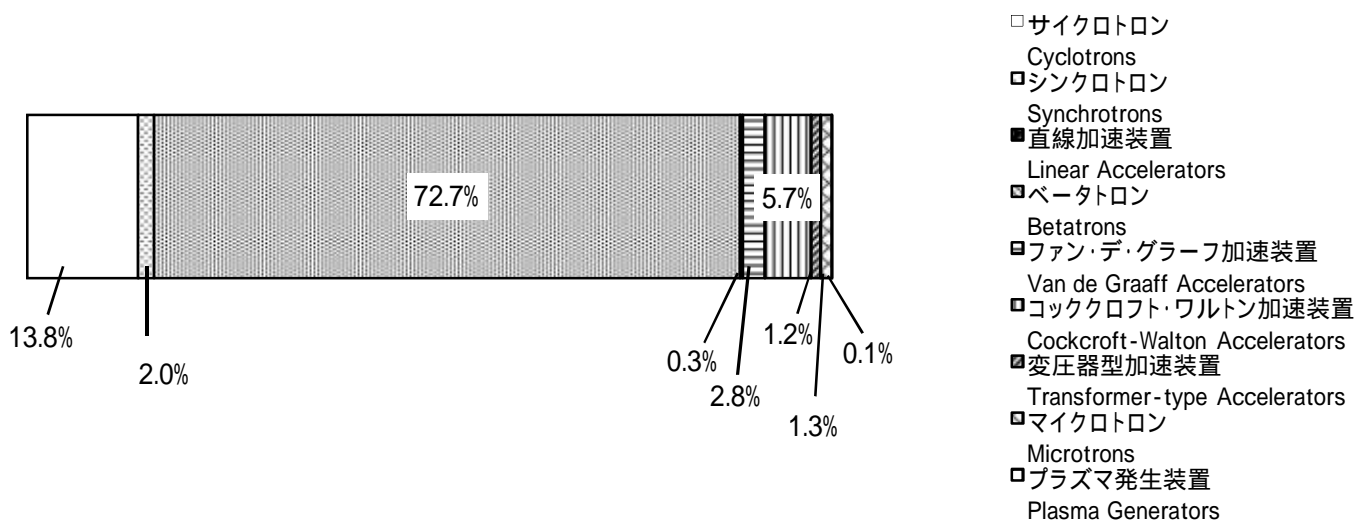
## 1.2.3 発生装置の使用許可台数(種類別, 機関別)

Number of Radiation Generators in Use (as of March 31,2008)

| 発生装置<br>Radiation Generators                      | 機関<br>Category | 総数 Total<br>構成比<br>Ratio(%) | 医療機関<br>Hospitals<br>&Clinics | 教育機関<br>Educational<br>Organizations | 研究機関<br>Reseach<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|---|----------------|-----------------------------|-------------------------------|--------------------------------------|---------------------------------|-----------------------------|----------------------------------|
| 総数<br>Total                                       |                | 1,433                       | 1,039                         | 66                                   | 141                             | 146                         | 41                               |
| 構成比<br>Ratio %                                    |                | 100%                        | 72.5                          | 4.6                                  | 9.8                             | 10.2                        | 2.9                              |
| サイクロトロン<br>Cyclotrons                             |                | 198 13.8                    | 131                           | 2                                    | 22                              | 39                          | 4                                |
| シンクロトロン<br>Synchrotrons                           |                | 28 2.0                      | 3                             | 3                                    | 17                              | 4                           | 1                                |
| シンクロサイクロトロン<br>Synchrocyclotrons                  |                | 2 0.1                       | 1                             | -                                    | -                               | 1                           | -                                |
| 直線加速装置<br>Linear Accelerators                     |                | 1,042 72.7                  | 890                           | 22                                   | 39                              | 55                          | 36                               |
| ベータトロン<br>Betatrons                               |                | 4 0.3                       | 1                             | 1                                    | 2                               | -                           | -                                |
| ファン・デ・グラーフ加速装置<br>Van de Graaff Accelerators      |                | 40 2.8                      | -                             | 16                                   | 23                              | 1                           | -                                |
| コッククロフト・ワルトン加速装置<br>Cockcroft-Walton Accelerators |                | 82 5.7                      | -                             | 20                                   | 26                              | 36                          | -                                |
| 変圧器型加速装置<br>Transformer-type Accelerators         |                | 17 1.2                      | -                             | -                                    | 10                              | 7                           | -                                |
| マイクロトロン<br>Microtrons                             |                | 19 1.3                      | 13                            | 2                                    | 1                               | 3                           | -                                |
| プラズマ発生装置<br>Plasma Generators                     |                | 1 0.1                       | -                             | -                                    | 1                               | -                           | -                                |

図4 発生装置の使用許可台数

Fig.4 Number of Radiation Generators in Use (as of March 31,2008)



## 1.2.4 表示付認証機器の使用届出台数(種類別, 機関別)

Number of Approved Devices with certification labels in Use (as of March 31,2008)

| 機器<br>Approved Device                  | 機関<br>Category | 総数 Total<br>構成比<br>Ratio(%) | 医療機関<br>Hospitals<br>&Clinics | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|--|----------------|-----------------------------|-------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| 総数 Total                               |                | 4,500                       | 4                             | 189                                  | 291                              | 1,519                       | 2,497                            |
| 構成比 Ratio %                            |                | 100%                        | 0.1                           | 4.2                                  | 6.5                              | 33.8                        | 55.5                             |
| 校正用線源<br>Calibration Sources           |                | 1,485 33.0                  | -                             | 22                                   | 8                                | 47                          | 1,408                            |
| 厚さ計<br>Thickness Gauges                |                | 5 0.1                       | -                             | -                                    | -                                | 5                           | -                                |
| レベル計<br>Level Gauges                   |                | 152 3.4                     | -                             | -                                    | -                                | 144                         | 8                                |
| 密度計<br>Density Gauges                  |                | 11 0.2                      | -                             | -                                    | -                                | 11                          | -                                |
| 水分密度計<br>Moisture & Density Gauges     |                | 98 2.2                      | -                             | -                                    | -                                | 95                          | 3                                |
| 水分計<br>Moisture Gauges                 |                | 13 0.3                      | -                             | -                                    | -                                | 13                          | -                                |
| ガスクロマトグラフ<br>Gas Chromatograph         |                | 2,284 50.8                  | 4                             | 163                                  | 282                              | 1,168                       | 667                              |
| 静電除去装置<br>Electric Static Eliminator   |                | 14 0.3                      | -                             | 4                                    | -                                | 9                           | 1                                |
| 爆発物・薬物検知器<br>Explosive & Drug Detector |                | 294 6.5                     | -                             | -                                    | 1                                | 27                          | 266                              |
| その他<br>Others                          |                | 144 3.2                     | -                             | -                                    | -                                | -                           | 144                              |

## 2 各機関別利用状況\*

### UTILIZATION OF RADIATION BY ORGANIZATIONS IN EACH CATEGORY

#### 2.1 医療機関 Hospitals and Clinics

##### 2.1.1 使用許可・届出事業所数(開設者別) Number of Licensed Hospitals and Clinics by Ownership and by License (as of March 31, 2008)

| 開設者<br>Type of Ownership     | 許可・届出の別<br>Category of License                              | 総数<br>Total | 許可事業所<br>Permitted | 届出事業所<br>Reported |
|------------------------------|---|-------------|--------------------|-------------------|
| <b>総数</b><br>Total           |   | <b>910</b>  | <b>889</b>         | <b>21</b>         |
| 病院 (総数)<br>Hospitals (Total) |   | 910         | 889                | 21                |
|                              | 国・独立行政法人<br>National  | 161         | 160                | 1                 |
|                              | 公的・地方独立行政法人<br>Local Governmental<br>& Public Organizations | 395         | 392                | 3                 |
|                              | 医療法人および個人<br>Private  | 173         | 162                | 11                |
|                              | その他<br>Other  | 181         | 175                | 6                 |
| 診療所<br>Clinics               |   | -           | -                  | -                 |

\*本章のデータには、表示付認証機器届出事業所は含まれていない

\*Number of Users are not included notifying users of the approved devices with certification labels.

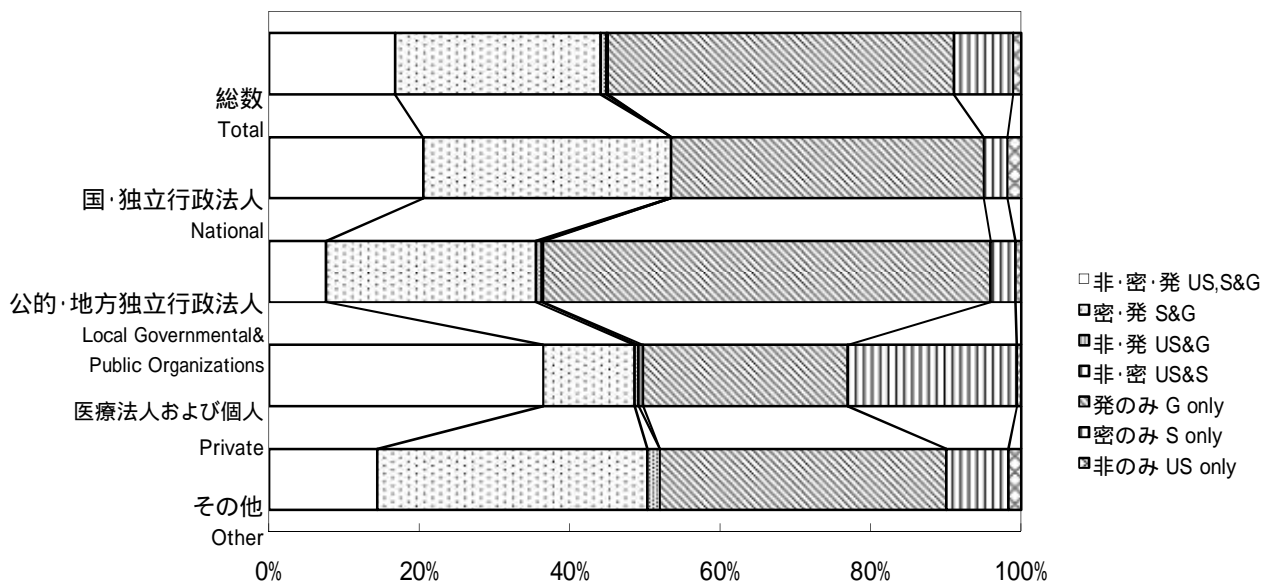
2.1.2 使用許可・届出事業所数 (開設者別, 利用形態別)

Number of Licensed Hospitals and Clinics by Ownership and by Usage (as of March 31, 2008)

| 開設者<br>Type of Ownership                                 | 利用形態<br>Usage | 総数<br>Total | 非のみ<br>US only | 密のみ<br>S only | 発のみ<br>G only | 非・密<br>US & S | 非・発<br>US & G | 密・発<br>S & G | 非・密・発<br>US,S&G | 延べ計         |             |             |
|--|---------------|-------------|----------------|---------------|---------------|---------------|---------------|--------------|-----------------|-------------|-------------|-------------|
|  |               |             |                |               |               |               |               |              |                 | 非US         | 密S          | 発G          |
| <b>総数 Total</b>  |               | <b>910</b>  | <b>10</b>      | <b>72</b>     | <b>418</b>    | <b>2</b>      | <b>7</b>      | <b>249</b>   | <b>152</b>      | <b>171</b>  | <b>475</b>  | <b>826</b>  |
| <b>構成比 Raito (%)</b>                                     |               | <b>100%</b> | <b>1.1</b>     | <b>7.9</b>    | <b>45.9</b>   | <b>0.2</b>    | <b>0.8</b>    | <b>27.4</b>  | <b>16.7</b>     | <b>18.8</b> | <b>52.2</b> | <b>90.8</b> |
| 病院 (総数)<br>Hospitals (Total)                             |               | 910         | 10             | 72            | 418           | 2             | 7             | 249          | 152             | 171         | 475         | 826         |
| 国・独立行政法人<br>National                                     |               | 161         | 3              | 5             | 67            | -             | -             | 53           | 33              | 36          | 91          | 153         |
| 公的・地方独立行政法人<br>Local Governmental & Public Organizations |               | 395         | 3              | 13            | 235           | 1             | 3             | 110          | 30              | 37          | 154         | 378         |
| 医療法人および個人<br>Private                                     |               | 173         | 1              | 39            | 47            | 1             | 1             | 21           | 63              | 66          | 124         | 132         |
| その他<br>Other   |               | 181         | 3              | 15            | 69            | -             | 3             | 65           | 26              | 32          | 106         | 163         |
| 診療所<br>Clinic  |               | -           | -              | -             | -             | -             | -             | -            | -               | -           | -           | -           |

図5 病院における利用形態

Fig.5 Usage of Radiation in Licensed Hospitals (as of March 31, 2008)



## 2.1.3 使用許可・届出事業所数(都道府県別, 利用形態別)

Number of Licensed Hospitals and Clinics by Prefecture and by Usage (as of March 31, 2008)

| 都道府県<br>Prefecture | 利用形態<br>Usage | 総数<br>Total | 非のみ<br>US only | 密のみ<br>S only | 発のみ<br>G only | 非・密<br>US & S | 非・発<br>US & G | 密・発<br>S & G | 非・密・発<br>US,S&G | 延べ計        |            |            |
|--------------------|---------------|-------------|----------------|---------------|---------------|---------------|---------------|--------------|-----------------|------------|------------|------------|
|                    |               |             |                |               |               |               |               |              |                 | 非US        | 密S         | 発G         |
| <b>全 国</b>         | <b>Total</b>  | <b>910</b>  | <b>10</b>      | <b>72</b>     | <b>418</b>    | <b>2</b>      | <b>7</b>      | <b>249</b>   | <b>152</b>      | <b>171</b> | <b>475</b> | <b>826</b> |
| 100                | 北 海 道         | 38          | -              | 1             | 17            | -             | -             | 11           | 9               | 9          | 21         | 37         |
| 201                | 青 森           | 13          | 1              | -             | 9             | -             | -             | 3            | -               | 1          | 3          | 12         |
| 202                | 岩 手           | 11          | -              | -             | 8             | -             | -             | 2            | 1               | 1          | 3          | 11         |
| 203                | 宮 城           | 18          | -              | 2             | 8             | -             | -             | 2            | 6               | 6          | 10         | 16         |
| 204                | 秋 田           | 10          | -              | -             | 9             | -             | -             | 1            | -               | -          | 1          | 10         |
| 205                | 山 形           | 9           | -              | -             | 4             | -             | -             | 4            | 1               | 1          | 5          | 9          |
| 206                | 福 島           | 12          | -              | -             | 5             | -             | -             | 5            | 2               | 2          | 7          | 12         |
| 301                | 茨 城           | 20          | -              | 1             | 14            | -             | -             | 4            | 1               | 1          | 6          | 19         |
| 302                | 栃 木           | 11          | -              | 1             | 5             | -             | -             | 3            | 2               | 2          | 6          | 10         |
| 303                | 群 馬           | 16          | -              | 4             | 4             | -             | -             | 6            | 2               | 2          | 12         | 12         |
| 304                | 埼 玉           | 26          | -              | 1             | 10            | -             | 1             | 9            | 5               | 6          | 15         | 25         |
| 305                | 千 葉           | 26          | -              | -             | 12            | -             | 1             | 5            | 8               | 9          | 13         | 26         |
| 306                | 東 京           | 95          | 1              | 9             | 36            | 1             | 1             | 31           | 16              | 19         | 57         | 84         |
| 307                | 神 奈 川         | 46          | -              | 3             | 20            | -             | 1             | 14           | 8               | 9          | 25         | 43         |
| 401                | 新 潟           | 17          | 1              | 1             | 11            | -             | -             | 2            | 2               | 3          | 5          | 15         |
| 402                | 富 山           | 12          | -              | 1             | 7             | -             | -             | 3            | 1               | 1          | 5          | 11         |
| 403                | 石 川           | 13          | -              | 2             | 4             | -             | -             | 4            | 3               | 3          | 9          | 11         |
| 404                | 福 井           | 7           | -              | -             | 2             | -             | -             | 3            | 2               | 2          | 5          | 7          |
| 405                | 山 梨           | 6           | -              | 1             | 1             | -             | -             | 2            | 2               | 2          | 5          | 5          |
| 406                | 山 梨           | 17          | -              | -             | 8             | -             | -             | 7            | 2               | 2          | 9          | 17         |
| 407                | 岐 阜           | 12          | -              | 1             | 6             | -             | -             | 4            | 1               | 1          | 6          | 11         |
| 408                | 静 岡           | 33          | 1              | 1             | 19            | 1             | -             | 6            | 5               | 7          | 13         | 30         |
| 409                | 愛 知           | 50          | 1              | 4             | 21            | -             | 1             | 13           | 10              | 12         | 27         | 45         |
| 501                | 三 重           | 15          | -              | 3             | 9             | -             | -             | 1            | 2               | 2          | 6          | 12         |
| 502                | 滋 賀           | 12          | -              | 2             | 6             | -             | -             | 2            | 2               | 2          | 6          | 10         |
| 503                | 京 都           | 22          | 3              | 1             | 9             | -             | -             | 3            | 6               | 9          | 10         | 18         |
| 504                | 大 阪           | 72          | 2              | 5             | 26            | -             | 1             | 22           | 16              | 19         | 43         | 65         |
| 505                | 兵 庫           | 40          | -              | 6             | 21            | -             | -             | 8            | 5               | 5          | 19         | 34         |
| 506                | 和 歌 山         | 9           | -              | -             | 5             | -             | -             | 1            | 3               | 3          | 4          | 9          |
| 507                | 和 歌 山         | 11          | -              | 1             | 6             | -             | -             | 3            | 1               | 1          | 5          | 10         |
| 601                | 鳥 取           | 7           | -              | 1             | 4             | -             | -             | 2            | -               | -          | 3          | 6          |
| 602                | 島 根           | 6           | -              | -             | 3             | -             | -             | 3            | -               | -          | 3          | 6          |
| 603                | 岡 山           | 13          | -              | 2             | 3             | -             | -             | 5            | 3               | 3          | 10         | 11         |
| 604                | 広 島           | 21          | -              | 3             | 8             | -             | -             | 7            | 3               | 3          | 13         | 18         |
| 605                | 山 口           | 16          | -              | 1             | 10            | -             | -             | 3            | 2               | 2          | 6          | 15         |
| 606                | 山 口           | 5           | -              | -             | 4             | -             | -             | -            | 1               | 1          | 1          | 5          |
| 607                | 徳 島           | 10          | -              | 2             | 4             | -             | -             | 3            | 1               | 1          | 6          | 8          |
| 608                | 香 川           | 13          | -              | -             | 5             | -             | -             | 6            | 2               | 2          | 8          | 13         |
| 609                | 高 知           | 6           | -              | 1             | 3             | -             | -             | 1            | 1               | 1          | 3          | 5          |
| 701                | 福 岡           | 32          | -              | 5             | 8             | -             | -             | 14           | 5               | 5          | 24         | 27         |
| 702                | 佐 賀           | 6           | -              | -             | 4             | -             | -             | 2            | -               | -          | 2          | 6          |
| 703                | 長 崎           | 10          | -              | 2             | 4             | -             | -             | 3            | 1               | 1          | 6          | 8          |
| 704                | 熊 本           | 16          | -              | -             | 9             | -             | -             | 5            | 2               | 2          | 7          | 16         |
| 705                | 大 分           | 13          | -              | 1             | 6             | -             | 1             | 4            | 1               | 2          | 6          | 12         |
| 706                | 宮 崎           | 10          | -              | -             | 6             | -             | -             | 2            | 2               | 2          | 4          | 10         |
| 707                | 鹿 児 島         | 18          | -              | 2             | 10            | -             | -             | 4            | 2               | 2          | 8          | 16         |
| 708                | 沖 縄           | 9           | -              | 1             | 5             | -             | -             | 1            | 2               | 2          | 4          | 8          |

## 2.1.4 近接治療装置の使用許可・届出事業所数(核種別,放射能別)

Number of Licensed Hospitals and Clinics Using Brachytherapy (as of March 31, 2008)

| 核種<br>Nuclides    | 機器<br>Apparatus | 低線量率近接治療装置 low dose rate brachytherapy |                     |                               |                              | 中、高線量率近接治療装置<br>middle and high dose rate<br>brachytherapy<br>A&D |     |     |
|-------------------|-----------------|--|---------------------|-------------------------------|------------------------------|---|-----|-----|
|                   |                 | 総数<br>Total                            | less than<br>100MBq | 100MBq<br>~ less than<br>1GBq | 1GBq<br>~ less than<br>10GBq | 10GBq<br>and over   |     |     |
| $^{60}\text{Co}$  |                 | 3                                      | -                   | -                             | 1                            | 2   | 55  | 57  |
| $^{90}\text{Sr}$  |                 | 17                                     | -                   | 6                             | 11                           | -   | -   | -   |
| $^{103}\text{Pa}$ |                 | -                                      | -                   | -                             | -                            | -   | -   | -   |
| $^{106}\text{Ru}$ |                 | 1                                      | -                   | 1                             | -                            | -   | -   | -   |
| $^{125}\text{I}$  |                 | 94                                     | -                   | -                             | 3                            | 91  | -   | -   |
| $^{137}\text{Cs}$ |                 | 36                                     | -                   | 3                             | 14                           | 19  | -   | -   |
| $^{192}\text{Ir}$ |                 | 28                                     | -                   | -                             | 12                           | 16  | 132 | 133 |
| $^{198}\text{Au}$ |                 | 46                                     | -                   | -                             | 28                           | 18  | -   | -   |
| $^{226}\text{Ra}$ |                 | 10                                     | 1                   | 3                             | 5                            | 1   | -   | -   |

注1 A&amp;D 欄は許可・届出台数。

Note:1 The figure in A&amp;D shows the number of apparatus.

### 2.1.5 遠隔照射治療装置の使用許可台数(放射能別, 発生装置の種類別, 年度別)

Changes with the Year in the Number of Teletherapeutic Apparatus in Use in Hospitals and Clinics  
(as of March 31 of Each Year from 2007 to 2008)

| 放射能, 装置<br>Activity or Apparatus                     | 年月<br>Year | Mar.<br>2007 |      | Mar.<br>2008 |      | 構成比<br>Ratio(%) |
|--|------------|--------------|------|--------------|------|-----------------|
|  |            | [CO]         | [CS] | [CO]         | [CS] |                 |
| <b>総数<br/>Total</b>                                  |            | <b>1,106</b> |      | <b>1,134</b> |      |                 |
| <sup>60</sup> Co and <sup>137</sup> Cs<br>(総数 Total) |            | 91           | 14   | 82           | 13   | 100%            |
| Less than 1TBq<br>H&C                                |            | 2            | -    | -            | -    | -               |
| 1TBq ~ less than 10TBq<br>H&C                        |            | -            | -    | -            | -    | -               |
| 10TBq ~ less than 100TBq<br>H&C                      |            | 13           | 12   | 10           | 11   | 22.1            |
| 100TBq and over<br>H&C                               |            | 76           | 2    | 72           | 2    | 77.9            |
| <b>発生装置(総数)<br/>Radiation Generators ( Total )</b>   |            | <b>1001</b>  |      | <b>1039</b>  |      | <b>100%</b>     |
| 直線加速器 Linear Accelerators<br>H&C                     |            | 858          |      | 890          |      | 85.7            |
| ベータトロン Betatrons<br>H&C                              |            | 1            |      | 1            |      | 0.1             |
| サイクロトロン Cyclotrons<br>H&C                            |            | 124          |      | 131          |      | 12.6            |
| シンクロトロン Synchrotrons<br>H&C                          |            | 3            |      | 3            |      | 0.3             |
| シンクロサイクロトロン Synchrocyclotrons<br>H&C                 |            | 0            |      | 1            |      | 0.1             |
| マイクロトロン Microtrons<br>H&C                            |            | 15           |      | 13           |      | 1.3             |

注1 H&C 欄は許可・届出事業所数。

注2 [CO]欄は<sup>60</sup>Coの台数, [CS] 欄は<sup>137</sup>Csの台数。

Note:1 H&C shows the number of licensed hospitals and clinics.

Note:2 [CO] shows the number of <sup>60</sup>Co and [CS] shows the number of <sup>137</sup>Cs teletherapeutic apparatus.



## 2.1.6 おもな装備機器の使用許可・届出台数(機器の種類別,核種別)

Number of Major Apparatus in Use in Hoapitals and Clinics by Nuclide (as of March 31, 2008)

| 核種<br>Nuclides      | 機器<br>Apparatus | 総数<br>Total     |             | ガスクロマトグラフ         | 骨塩定量分析装置          | 血液照射装置            | 校正用線源               |
|---------------------|-----------------|-----------------|-------------|-------------------|-------------------|-------------------|---------------------|
|                     |                 | 構成比<br>(Ratio%) |             | Gas Chromatograph | Bone Densitometry | Blood Irradiators | Calibration Sources |
| <b>総数<br/>Total</b> |                 | <b>878</b>      | <b>100%</b> | <b>2</b>          | <b>13</b>         | <b>94</b>         | <b>769</b>          |
| <sup>63</sup> Ni    |                 | 2               | 0.2         | 2                 | -                 | -                 | -                   |
| <sup>68</sup> Ge    |                 | 590             | 67.2        | -                 | -                 | -                 | 590                 |
| <sup>90</sup> Sr    |                 | 64              | 7.3         | -                 | -                 | -                 | 64                  |
| <sup>125</sup> I    |                 | 2               | 0.2         | -                 | 2                 | -                 | -                   |
| <sup>133</sup> Ba   |                 | 1               | 0.1         | -                 | -                 | -                 | 1                   |
| <sup>137</sup> Cs   |                 | 164             | 18.7        | -                 | -                 | 94                | 70                  |
| <sup>153</sup> Gd   |                 | 11              | 1.3         | -                 | 11                | -                 | -                   |
| <sup>226</sup> Ra   |                 | 3               | 0.3         | -                 | -                 | -                 | 3                   |
| <sup>241</sup> Am   |                 | -               | -           | -                 | -                 | -                 | -                   |
| Others              |                 | 41              | 4.7         | -                 | -                 | -                 | 41                  |

## 2.2 教育機関および研究機関 Educational Organizations and Research Institutions

### 2.2.1 使用許可・届出事業所数 (教育機関・研究機関の種類別) Number of Licensed Educational Organizations and Research Institutions by Ownership and by License (as of March 31, 2008)

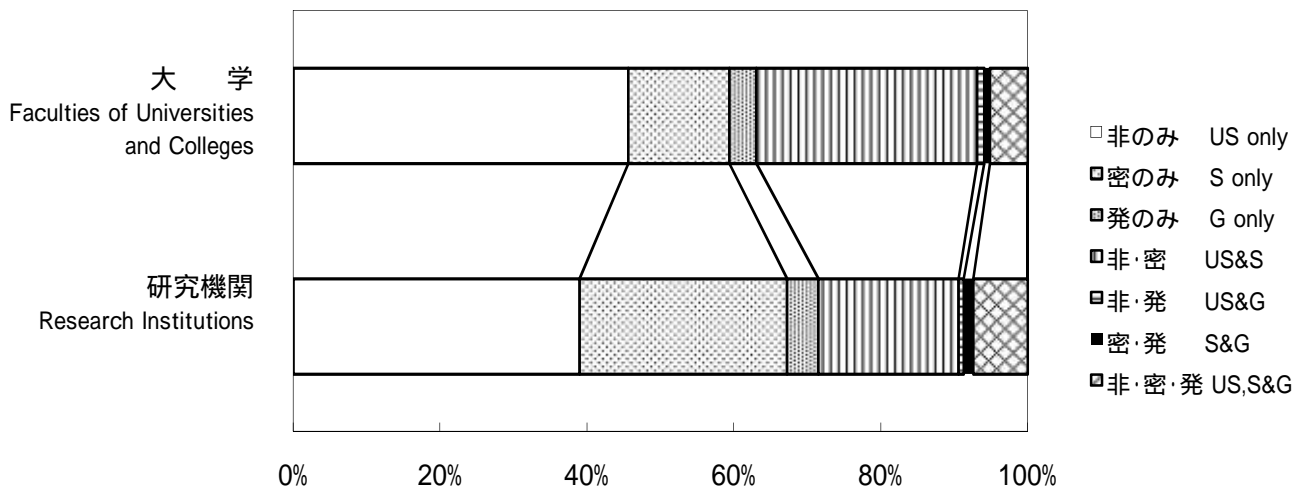
| 教育機関,<br>研究機関の種類<br>Type of Ownership                         | 許可・届出の別<br>Category of License | 総数<br>Total | 許可<br>Permitted | 届出<br>Reported |
|---|--------------------------------|-------------|-----------------|----------------|
| <b>総 数 Total</b>  |                                | <b>809</b>  | <b>679</b>      | <b>130</b>     |
| 教 育 機 関 ( 総 数 )<br>Educational Organizations (Total)          |                                | 406         | 376             | 30             |
| 大 学 ( 総 数 )<br>Faculties of Universities and Colleges (Total) |                                | 401         | 374             | 27             |
| 国立・独立行政法人<br>National   |                                | 212         | 200             | 12             |
| 公立・地方独立行政法人<br>Local Governmental                             |                                | 32          | 29              | 3              |
| 私立<br>Private   |                                | 157         | 145             | 12             |
| 短大・高専<br>Junior Colleges and Technical Colleges               |                                | 5           | 2               | 3              |
| 高 校<br>High Schools   |                                | -           | -               | -              |
| 研 究 機 関 ( 総 数 )<br>Research Institutions (Total)              |                                | 403         | 303             | 100            |
| 大学付属<br>Attached to Universities and Colleges                 |                                | 53          | 53              | -              |
| 国立・独立行政法人<br>National   |                                | 88          | 85              | 3              |
| 公立・地方独立行政法人<br>Local Governmental                             |                                | 79          | 22              | 57             |
| 特殊法人・公益法人<br>Public Corporation and Non-profit Private        |                                | 38          | 25              | 13             |
| 私立<br>Private   |                                | 145         | 118             | 27             |

2.2.2 使用許可・届出事業所数 (教育機関・研究機関の種類別, 利用形態別)

Number of Licensed Educational Organizations and Research Institutions by Ownership and by Usage (as of March 31, 2008)

| 教育機関,<br>研究機関の種類<br>Type of Ownership                        | 利用形態<br>Usage | 総数<br>Total | 非のみ<br>US only | 密のみ<br>S only | 発のみ<br>G only | 非・密<br>US&S | 非・発<br>US&G | 密・発<br>S&G | 非・密<br>発<br>US,S<br>&G | 延べ計<br>Total |            |           |
|--|---------------|-------------|----------------|---------------|---------------|-------------|-------------|------------|------------------------|--------------|------------|-----------|
|  |               |             |                |               |               |             |             |            |                        | 非<br>US      | 密<br>S     | 発<br>G    |
| <b>総数</b><br><b>Total</b>                                    |               | <b>809</b>  | <b>342</b>     | <b>170</b>    | <b>32</b>     | <b>199</b>  | <b>7</b>    | <b>8</b>   | <b>51</b>              | <b>599</b>   | <b>428</b> | <b>98</b> |
| 教育機関 (総数)<br>Educational Organizations (Total)               |               | 406         | 185            | 56            | 15            | 122         | 4           | 3          | 21                     | 332          | 202        | 43        |
| 大学 (総数)<br>Faculties of Universities<br>and Colleges (Total) |               | 401         | 184            | 52            | 15            | 122         | 4           | 3          | 21                     | 331          | 198        | 43        |
| 国立・独立行政法人<br>National  |               | 212         | 91             | 25            | 7             | 73          | 2           | 1          | 13                     | 179          | 112        | 23        |
| 公立・地方独立行政法人<br>Local Governmental                            |               | 32          | 15             | 3             | -             | 8           | -           | 1          | 5                      | 28           | 17         | 6         |
| 私立<br>Private  |               | 157         | 78             | 24            | 8             | 41          | 2           | 1          | 3                      | 124          | 69         | 14        |
| 短大・高専<br>Junior Colleges and Technical Colleges              |               | 5           | 1              | 4             | -             | -           | -           | -          | -                      | 1            | 4          | 0         |
| 高等学校<br>High Schools   |               | -           | -              | -             | -             | -           | -           | -          | -                      | -            | -          | -         |
| 研究機関 (総数)<br>Research Institutions (Total)                   |               | 403         | 157            | 114           | 17            | 77          | 3           | 5          | 30                     | 267          | 226        | 55        |
| 大学付属<br>Attached to Universities<br>and Colleges             |               | 53          | 24             | 1             | 2             | 13          | 2           | 3          | 8                      | 47           | 25         | 15        |
| 国立・独立行政法人<br>National  |               | 88          | 25             | 10            | 11            | 28          | -           | -          | 14                     | 67           | 52         | 25        |
| 公立・地方独立行政法人<br>Local Governmental                            |               | 79          | 7              | 60            | -             | 10          | -           | -          | 2                      | 19           | 72         | 2         |
| 特殊法人・公益法人<br>Public Corporation<br>and Non-profit Private    |               | 38          | 13             | 13            | 1             | 6           | 1           | 1          | 3                      | 23           | 23         | 6         |
| 私立<br>Private  |               | 145         | 88             | 30            | 3             | 20          | -           | 1          | 3                      | 111          | 54         | 7         |

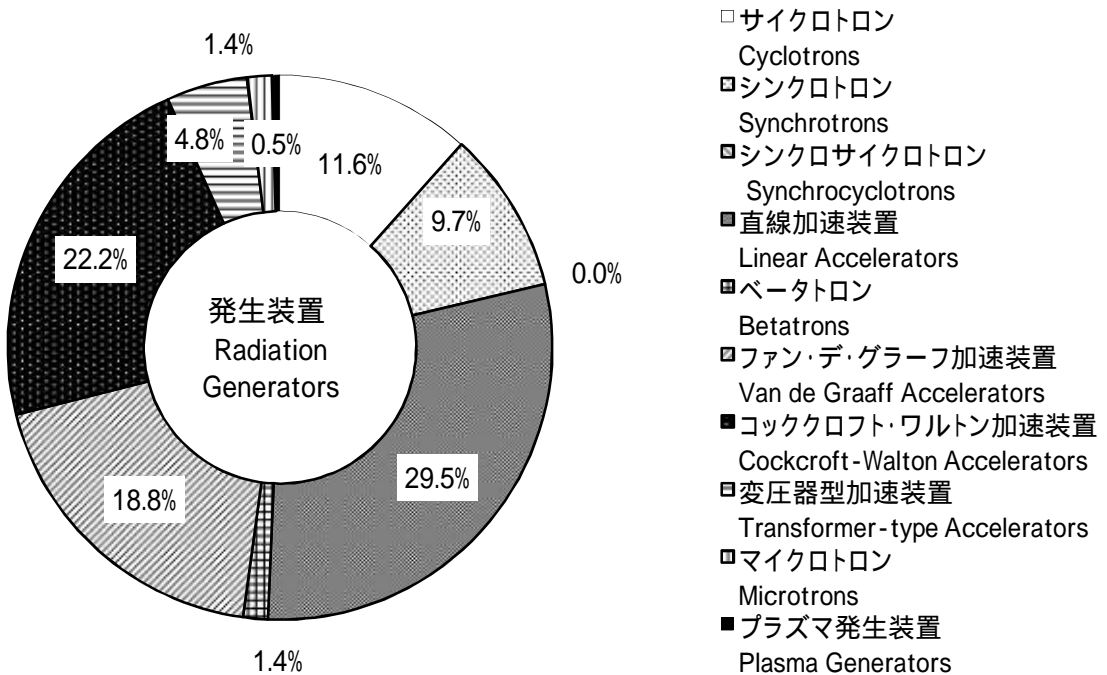
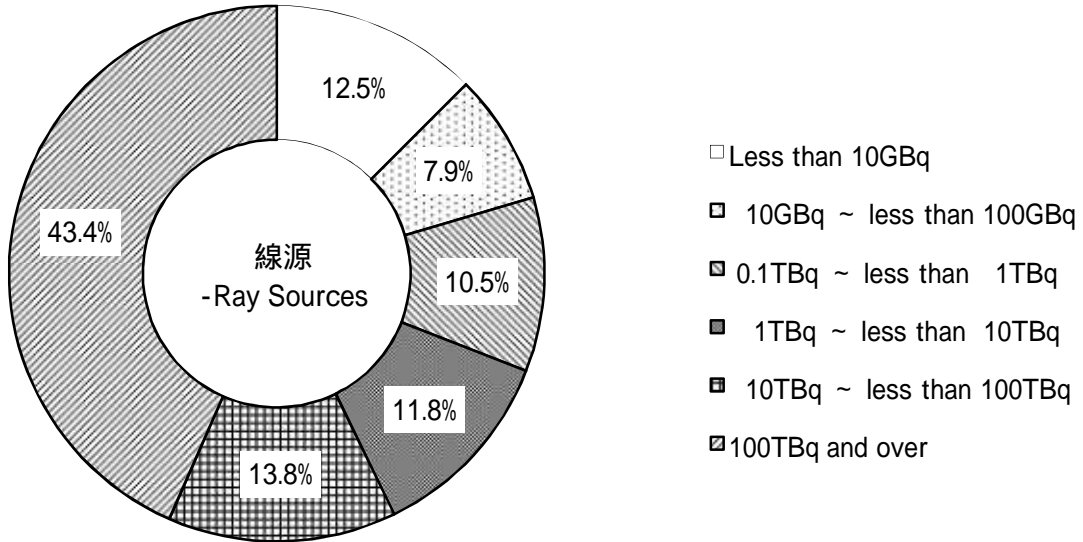
図6 大学および研究機関における利用形態  
Fig.6 Usage of Radiation in Licensed Universities and Research Institutions (as of March 31, 2008)



2.2.3 照射装置の使用許可・届出台数(放射能別,発生装置の種類別,分野別)  
 Number of  $\gamma$ -Ray Irradiation Facilities and Radiation Generators in Use  
 in Educational Organizations and Research Institutions (as of March 31,2008)

| 放射能,装置<br>Activity or Apparatus   | 分野<br>Fields | 総数<br>Total | 構成比<br>(Ratio%) | 教育機関        | 研究機関        |
|---|--------------|-------------|-----------------|-------------|-------------|
| <b>線源 (総数 Total)</b><br><b><math>\gamma</math>-Ray Sources (構成比 Ratio%)</b> |              | <b>152</b>  |                 | <b>51</b>   | <b>101</b>  |
|   |              |             | <b>100%</b>     | <b>33.6</b> | <b>66.4</b> |
| Less than 10GBq   |              | 19          | 12.5            | -           | 19          |
| 10GBq ~ less than 100GBq  |              | 12          | 7.9             | 1           | 11          |
| 0.1TBq ~ less than 1TBq   |              | 16          | 10.5            | 4           | 12          |
| 1TBq ~ less than 10TBq  |              | 18          | 11.8            | 3           | 15          |
| 10TBq ~ less than 100TBq  |              | 21          | 13.8            | 12          | 9           |
| 100TBq and over   |              | 66          | 43.4            | 31          | 35          |
| <b>発生装置 (総数 Total)</b><br><b>Radiation Generators (構成比 Ratio%)</b>          |              | <b>207</b>  |                 | <b>66</b>   | <b>141</b>  |
|   |              |             | <b>100%</b>     | <b>31.9</b> | <b>68.1</b> |
| サイクロトロン<br>Cyclotrons   |              | 24          | 11.6            | 2           | 22          |
| シンクロトロン<br>Synchrotrons   |              | 20          | 9.7             | 3           | 17          |
| シンクロサイクロトロン<br>Synchrocyclotrons  |              | -           | -               | -           | -           |
| 直線加速装置<br>Linear Accelerators   |              | 61          | 29.5            | 22          | 39          |
| ベータトロン<br>Betatrons   |              | 3           | 1.4             | 1           | 2           |
| ファン・デ・グラーフ加速装置<br>Van de Graaff Accelerators                                |              | 39          | 18.8            | 16          | 23          |
| コックロフト・ワルトン加速装置<br>Cockcroft-Walton Accelerators                            |              | 46          | 22.2            | 20          | 26          |
| 変圧器型加速装置<br>Transformer-type Accelerators                                   |              | 10          | 4.8             | -           | 10          |
| マイクロトロン<br>Microtrons   |              | 3           | 1.4             | 2           | 1           |
| プラズマ発生装置<br>Plasma Generators   |              | 1           | 0.5             | -           | 1           |

図7 教育・研究機関における照射装置の構成比  
 Fig.7 Number of  $\gamma$ -Ray Irradiation Facilities and Radiation Generators  
 in Use in Educational Organizations and Research Institutions  
 (as of March 31,2008)



## 2.2.4 非破壊検査装置およびおもな装備機器の使用許可・届出台数(機器の種類別,核種別)

Number of  $\gamma$ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Educational Organizations and Research Institutions by Nuclide (as of March 31, 2008)

| 核種<br>Nuclides      | 機器<br>Appa-<br>ratus | 総数<br>Total  | 構成比<br>(Ratio%) | 非破壊<br>検査装置<br>Radiography | 厚さ計<br>Thickness<br>Gauges | レベル計<br>Level<br>Gauges | 密度計<br>Density<br>Gauges | 水分計<br>Moisture<br>Gauges | 蛍光X線<br>分析装置<br>X-ray<br>Fluorescence<br>Spectrometer | ガスクロマ<br>ト<br>グラフ<br>Gas<br>Chromato-<br>graph | 硫黄<br>分析計<br>Sulfur<br>Meters | 静電除去<br>装置<br>Electric<br>Static<br>Eliminator | ガス<br>検知器<br>Gas<br>Detector | その他<br>Others |
|---------------------|----------------------|--------------|-----------------|----------------------------|----------------------------|-------------------------|--------------------------|---------------------------|---|--|-------------------------------|--|------------------------------|---------------|
| <b>総数<br/>Total</b> |                      | <b>2,035</b> | <b>100%</b>     | <b>10</b>                  | <b>8</b>                   | -                       | <b>35</b>                | -                         | <b>11</b>   | <b>636</b>                                     | -                             | <b>8</b>                                       | <b>2</b>                     | <b>1,335</b>  |
| $^3\text{H}$        |                      | 25           | 1.2             | -                          | -                          | -                       | -                        | -                         | -   | -  | -                             | -  | -                            | 25            |
| $^{55}\text{Fe}$    |                      | 26           | 1.3             | -                          | -                          | -                       | -                        | -                         | 4   | -  | -                             | -  | -                            | 22            |
| $^{60}\text{Co}$    |                      | 123          | 6.0             | 5                          | -                          | -                       | 1                        | -                         | -   | -  | -                             | -  | -                            | 122           |
| $^{63}\text{Ni}$    |                      | 639          | 31.4            | -                          | -                          | -                       | -                        | -                         | -   | 636  | -                             | -  | 2                            | 1             |
| $^{85}\text{Kr}$    |                      | 8            | 0.4             | -                          | 4                          | -                       | -                        | -                         | -   | -  | -                             | -  | -                            | 4             |
| $^{137}\text{Cs}$   |                      | 140          | 6.9             | 1                          | -                          | -                       | 31                       | -                         | -   | -  | -                             | -  | -                            | 109           |
| $^{147}\text{Pm}$   |                      | 13           | 0.6             | -                          | 2                          | -                       | -                        | -                         | -   | -  | -                             | -  | -                            | 11            |
| $^{192}\text{Ir}$   |                      | -            | -               | 2                          | -                          | -                       | -                        | -                         | -   | -  | -                             | -  | -                            | -             |
| $^{210}\text{Po}$   |                      | 5            | 0.2             | -                          | -                          | -                       | -                        | -                         | -   | -  | -                             | 1  | -                            | 4             |
| $^{241}\text{Am}$   |                      | 198          | 9.7             | -                          | 1                          | -                       | 3                        | -                         | 4   | -  | -                             | -  | -                            | 190           |
| Others              |                      | 858          | 42.2            | 2                          | 1                          | -                       | -                        | -                         | 3   | -  | -                             | 7  | -                            | 847           |

## 2.3 民間企業 Industrial Firms

### 2.3.1 使用許可・届出事業所数 (業種別)

Number of Licensed Industrial Firms by Industry and by License ( as of March 31, 2008)

| 業種<br>Category of Industry                 | 許可・届出の別<br>Category of License |                            | 総数<br>Total                | 構成比<br>Ratio(%)            | 許可<br>Permitted            | 届出<br>Reported             |
|--|--------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
|  | 業種<br>Category of Industry     | 業種<br>Category of Industry | 業種<br>Category of Industry | 業種<br>Category of Industry | 業種<br>Category of Industry | 業種<br>Category of Industry |
| <b>総数</b><br><b>Total</b>                  |                                |                            | <b>1,175</b>               | <b>100%</b>                | <b>877</b>                 | <b>298</b>                 |
| 鉱業<br>Mining                               |                                |                            | 5                          | 0.4                        | 4                          | 1                          |
| 建設<br>Construction                         |                                |                            | 10                         | 0.9                        | 5                          | 5                          |
| 食料品<br>Food                                |                                |                            | 14                         | 1.2                        | 4                          | 10                         |
| 繊維<br>Textiles                             |                                |                            | 41                         | 3.5                        | 40                         | 1                          |
| パルプ・紙<br>Pulp and Paper                    |                                |                            | 153                        | 13.0                       | 151                        | 2                          |
| 化学<br>Chemicals                            |                                |                            | 269                        | 22.9                       | 232                        | 37                         |
| 石油・石炭製品<br>Petroleum and Coal              |                                |                            | 38                         | 3.2                        | 37                         | 1                          |
| ゴム製品<br>Rubber                             |                                |                            | 19                         | 1.6                        | 19                         | -                          |
| ガラス・土石製品<br>Glass, Stone and Clay          |                                |                            | 17                         | 1.4                        | 14                         | 3                          |
| 鉄鋼<br>Iron and Steel                       |                                |                            | 72                         | 6.1                        | 67                         | 5                          |
| 非鉄金属<br>Nonferrous Metals                  |                                |                            | 12                         | 1.0                        | 12                         | -                          |
| 金属製品<br>Fabricated Metals                  |                                |                            | 29                         | 2.5                        | 21                         | 8                          |
| 機械<br>Machinery                            |                                |                            | 41                         | 3.5                        | 26                         | 15                         |
| 電気機器<br>Electric Machines                  |                                |                            | 72                         | 6.1                        | 52                         | 20                         |
| 輸送用機器<br>Transportation Equipment          |                                |                            | 11                         | 0.9                        | 11                         | -                          |
| 精密機器<br>Precising Machinery                |                                |                            | 50                         | 4.3                        | 31                         | 19                         |
| その他製造<br>Miscellaneous Manufacturing       |                                |                            | 35                         | 3.0                        | 33                         | 2                          |
| 電機・ガス<br>Electricity and Gas               |                                |                            | 19                         | 1.6                        | 19                         | -                          |
| 非破壊検査<br>Nondestructive Inspection Service |                                |                            | 48                         | 4.1                        | 48                         | -                          |
| その他計測サービス<br>Other Inspection Services     |                                |                            | 171                        | 14.6                       | 22                         | 149                        |
| その他<br>Others                              |                                |                            | 49                         | 4.2                        | 29                         | 20                         |

## 2.3.2 使用許可・届出事業所数 (業種別, 利用形態別)

Number of Licensed Industrial Firms by Industry and by Usage ( as of March 31, 2008)

| 業種<br>Category of Industry                     | 利用形態<br>Usage | 総数<br>Total | 非のみ<br>US only | 密のみ<br>S only | 発のみ<br>G only | 非・密<br>US&S | 非・発<br>US&G | 密・発<br>S&G | 非・密<br>発<br>US,S&G | 延 べ 計 Total |        |        |
|--|---------------|-------------|----------------|---------------|---------------|-------------|-------------|------------|--------------------|-------------|--------|--------|
|  |               |             |                |               |               |             |             |            |                    | 非<br>US     | 密<br>S | 発<br>G |
| 総 数<br>Total                                   |               | 1,175       | 63             | 1,001         | 33            | 31          | 10          | 31         | 6                  | 110         | 1,069  | 80     |
| 構 成 比<br>Ratio(%)                              |               | 100%        | 5.4            | 85.2          | 2.8           | 2.6         | 0.9         | 2.6        | 0.5                |             |        |        |
| 鉱 業<br>Mining                                  |               | 5           | -              | 5             | -             | -           | -           | -          | -                  | -           | 5      | -      |
| 建 設<br>Construction                            |               | 10          | -              | 10            | -             | -           | -           | -          | -                  | -           | 10     | -      |
| 食 料 品<br>Food                                  |               | 14          | 2              | 11            | -             | 1           | -           | -          | -                  | 3           | 12     | -      |
| 織 維<br>Textiles                                |               | 41          | 1              | 39            | -             | -           | -           | 1          | -                  | 1           | 40     | 1      |
| パルプ・紙<br>Pulp and Paper                        |               | 153         | -              | 152           | -             | 1           | -           | -          | -                  | 1           | 153    | -      |
| 化 学<br>Chemicals                               |               | 269         | 39             | 204           | 6             | 5           | 9           | 3          | 3                  | 56          | 215    | 21     |
| 石油・石炭製品<br>Petroleum and Coal                  |               | 38          | -              | 38            | -             | -           | -           | -          | -                  | -           | 38     | -      |
| ゴ ム 製 品<br>Rubber                              |               | 19          | -              | 19            | -             | -           | -           | -          | -                  | -           | 19     | -      |
| ガラス・土石製品<br>Glass, Stone and Clay              |               | 17          | -              | 16            | -             | -           | -           | 1          | -                  | -           | 17     | 1      |
| 鉄 鋼<br>Iron and Steel                          |               | 72          | -              | 65            | 1             | 1           | -           | 5          | -                  | 1           | 71     | 6      |
| 非 鉄 金 属<br>Nonferrous Metals                   |               | 12          | -              | 10            | 1             | -           | -           | 1          | -                  | -           | 11     | 2      |
| 金 属 製 品<br>Fabricated Metals                   |               | 29          | -              | 26            | 1             | 1           | -           | 1          | -                  | 1           | 28     | 2      |
| 機 械<br>Machinery                               |               | 41          | -              | 33            | 5             | -           | 1           | 2          | -                  | 1           | 35     | 8      |
| 電 気 機 器<br>Electric Machines                   |               | 72          | 6              | 51            | 7             | 4           | -           | 3          | 1                  | 11          | 59     | 11     |
| 輸 送 用 機 器<br>Transportation Equipment          |               | 11          | -              | 7             | 2             | -           | -           | 2          | -                  | -           | 9      | 4      |
| 精 密 機 器<br>Precising Machinery                 |               | 50          | 5              | 38            | 2             | 3           | -           | 2          | -                  | 8           | 43     | 4      |
| そ の 他 製 造<br>Miscellaneous Manufacturing       |               | 35          | 1              | 33            | 1             | -           | -           | -          | -                  | 1           | 33     | 1      |
| 電 機 ・ ガ ス<br>Electricity and Gas               |               | 19          | -              | 10            | -             | 9           | -           | -          | -                  | 9           | 19     | -      |
| 非 破 壊 検 査<br>Nondestructive Inspection Service |               | 48          | -              | 43            | -             | -           | -           | 5          | -                  | -           | 48     | 5      |
| そ の 他 計 測 サ ー ビ ス<br>Other Inspection Services |               | 171         | 7              | 157           | 1             | 2           | -           | 3          | 1                  | 10          | 163    | 5      |
| そ の 他<br>Others                                |               | 49          | 2              | 34            | 6             | 4           | -           | 2          | 1                  | 7           | 41     | 9      |



## 2.3.3 非破壊検査装置およびおもな装備機器の使用許可・届出事業所数

その(1) 業種別, 機器の種類別

Number of Licensed Industrial Firms Using -Ray Radiography Apparatus and Major Isotope Gauges by Industry  
(as of March 31, 2008)

| 業種<br>Category of Industry             | 非破壊検査装置<br>Radiography<br>A&D |     | 厚さ計<br>Thickness Gauges<br>A&D |       | レベル計<br>Level Gauges<br>A&D |       | 密度計<br>Density Gauges<br>A&D |     | 水分計<br>Moisture Gauges<br>A&D |    | 蛍光X線分析装置<br>X-ray Fluorescence Spectrometer<br>A&D |    | スラブ位置検出器<br>Slab Position Detector<br>A&D |    | ガスクロマトグラフ<br>Gas Chromatograph<br>A&D |       | 硫黄分析計<br>Sulfur Meters<br>A&D |     | たばこ量目制御装置<br>Cigarette Weight controller<br>A&D |     | 静電除去装置<br>Electric Static Eliminator<br>A&D |    | ガス検知器<br>Gas Detector<br>A&D |    | その他<br>Others<br>A&D |       |     |
|--|-------------------------------|-----|--------------------------------|-------|-----------------------------|-------|------------------------------|-----|-------------------------------|----|--|----|---|----|---------------------------------------|-------|-------------------------------|-----|---|-----|---|----|------------------------------|----|----------------------|-------|-----|
|  | A&D                           |     | A&D                            |       | A&D                         |       | A&D                          |     | A&D                           |    | A&D  |    | A&D                                       |    | A&D                                   |       | A&D                           |     | A&D   |     | A&D   |    | A&D                          |    | A&D                  |       |     |
|  | A&D                           |     | A&D                            |       | A&D                         |       | A&D                          |     | A&D                           |    | A&D  |    | A&D                                       |    | A&D                                   |       | A&D                           |     | A&D   |     | A&D   |    | A&D                          |    | A&D                  |       | A&D |
| 総数<br>Total                            | 110                           | 904 | 423                            | 2,484 | 162                         | 1,143 | 69                           | 430 | 18                            | 69 | 23   | 60 | 4   | 22 | 288                                   | 1,355 | 33                            | 140 | 8   | 177 | 8   | 16 | 10                           | 51 | 110                  | 2,638 |     |
| 鉱業<br>Mining                           | -                             | -   | 1                              | 8     | 1                           | 1     | 1                            | 2   | 1                             | 1  | -  | -  | -   | -  | 1                                     | 1     | -                             | -   | -   | -   | -   | -  | -                            | -  | 1                    | 3     |     |
| 建設<br>Construction                     | -                             | -   | -                              | -     | 3                           | 8     | 3                            | 3   | -                             | -  | -  | -  | -   | -  | 5                                     | 7     | -                             | -   | -   | -   | -   | -  | -                            | -  | 1                    | 2     |     |
| 食料品<br>Food                            | -                             | -   | -                              | -     | 1                           | 2     | -                            | -   | -                             | -  | -  | -  | -   | -  | 11                                    | 16    | -                             | -   | -   | -   | -   | -  | -                            | -  | -                    | -     |     |
| 繊維<br>Textiles                         | -                             | -   | 27                             | 153   | 13                          | 88    | 2                            | 10  | -                             | -  | -  | -  | -   | -  | 2                                     | 2     | -                             | -   | -   | -   | -   | -  | -                            | -  | -                    | -     |     |
| パルプ・紙<br>Pulp and Paper                | -                             | -   | 146                            | 875   | 36                          | 198   | 24                           | 78  | 2                             | 3  | 1  | 1  | -   | -  | 14                                    | 15    | 1                             | 1   | -   | -   | 1   | 3  | -                            | -  | 1                    | 2     |     |
| 化学<br>Chemicals                        | 2                             | 9   | 116                            | 508   | 50                          | 422   | 15                           | 35  | -                             | -  | 2  | 4  | -   | -  | 46                                    | 80    | 2                             | 3   | -   | -   | -   | -  | -                            | -  | 3                    | 4     |     |
| 石油・石炭製品<br>Petroleum and Coal          | 2                             | 2   | 4                              | 19    | 22                          | 229   | 7                            | 23  | -                             | -  | 5  | 10 | -   | -  | 1                                     | 2     | 26                            | 124 | -   | -   | -   | -  | -                            | -  | -                    | -     |     |
| ゴム製品<br>Rubber                         | -                             | -   | 18                             | 42    | -                           | -     | -                            | -   | -                             | -  | -  | -  | -   | -  | -                                     | -     | -                             | -   | -   | -   | -   | -  | -                            | -  | 1                    | 4     |     |
| ガラス・土石製品<br>Glass, Stone and Clay      | -                             | -   | 7                              | 13    | 4                           | 25    | 2                            | 2   | -                             | -  | -  | -  | -   | -  | 3                                     | 3     | -                             | -   | -   | -   | 1   | 2  | -                            | -  | 2                    | 4     |     |
| 鉄鋼<br>Iron and Steel                   | 13                            | 27  | 41                             | 530   | 20                          | 115   | 6                            | 11  | 12                            | 56 | 1  | 2  | 4   | 22 | 6                                     | 9     | 1                             | 2   | -   | -   | -   | -  | 1                            | 6  | 9                    | 21    |     |
| 非鉄金属<br>Nonferrous Metals              | 3                             | 4   | 5                              | 26    | 1                           | 2     | 2                            | 8   | -                             | -  | 1  | 2  | -   | -  | 1                                     | 1     | -                             | -   | -   | -   | -   | -  | -                            | -  | -                    | -     |     |
| 金属製品<br>Fabricated Metals              | 7                             | 9   | 10                             | 66    | 2                           | 13    | -                            | -   | 1                             | 7  | 5  | 10 | -   | -  | 4                                     | 5     | -                             | -   | -   | -   | -   | -  | -                            | -  | 1                    | 1     |     |
| 機械<br>Machinery                        | 11                            | 33  | 4                              | 12    | 1                           | 7     | 1                            | 1   | -                             | -  | 1  | 6  | -   | -  | 12                                    | 22    | -                             | -   | -   | -   | -   | -  | -                            | -  | 4                    | 77    |     |
| 電気機器<br>Electric Machines              | 3                             | 8   | 23                             | 140   | 1                           | 6     | -                            | -   | -                             | -  | 2  | 7  | -   | -  | 8                                     | 10    | 1                             | 6   | -   | -   | 1   | 1  | -                            | -  | 26                   | 332   |     |
| 輸送用機器<br>Transportation Equipment      | 4                             | 9   | 1                              | 1     | 1                           | 13    | 1                            | 12  | -                             | -  | -  | -  | -   | -  | -                                     | -     | -                             | -   | -   | -   | -   | -  | -                            | -  | 2                    | 7     |     |
| 精密機器<br>Precising Machinery            | 3                             | 6   | 8                              | 43    | -                           | -     | -                            | -   | -                             | -  | 1  | 2  | -   | -  | 16                                    | 855   | -                             | -   | -   | -   | 2   | 4  | -                            | -  | 13                   | 232   |     |
| その他製造<br>Miscellaneous Manufacturing   | 3                             | 13  | 12                             | 48    | 2                           | 4     | 1                            | 1   | -                             | -  | -  | -  | -   | -  | 2                                     | 2     | -                             | -   | 8   | 177 | 2   | 5  | -                            | -  | 4                    | 7     |     |
| 電機・ガス<br>Electricity and Gas           | -                             | -   | -                              | -     | -                           | -     | -                            | -   | 1                             | 1  | -  | -  | -   | -  | 2                                     | 4     | 2                             | 4   | -   | -   | -   | -  | 3                            | 12 | 17                   | 226   |     |
| 非破壊検査<br>Nondestructive Inspection     | 48                            | 735 | -                              | -     | -                           | -     | -                            | -   | -                             | -  | 3  | 14 | -   | -  | 1                                     | 2     | -                             | -   | -   | -   | -   | -  | -                            | -  | -                    | -     |     |
| その他計測サービス<br>Other Inspection Services | 9                             | 23  | -                              | -     | 1                           | 3     | -                            | -   | -                             | -  | 1  | 2  | -   | -  | 148                                   | 313   | -                             | -   | -   | -   | -   | -  | -                            | -  | 6                    | 15    |     |
| その他<br>Others                          | 2                             | 26  | -                              | -     | 3                           | 7     | 4                            | 244 | 1                             | 1  | -  | -  | -   | -  | 5                                     | 6     | -                             | -   | -   | -   | 1   | 1  | 6                            | 33 | 19                   | 1701  |     |

注1 A&amp;D 欄は許可・届出台数。

Note:1 The figure in A&amp;D shows the number of apparatus or gauges.

### 2.3.3 非破壊検査装置およびおもな装備機器の使用許可・届出事業所数

その(2) 許可・届出台数別, 機器の種類別

Number of Licensed Industrial Firms Using -Ray Radiography Apparatus and Major Isotope Gauges  
by Number of Possessions (as of March 31, 2008)

| 台数<br>Number of<br>Apparatus | 機器<br>Apparatus | 非破壊<br>検査装置      | 厚さ計                 | レベル計            | 密度計               | 水分計                | 蛍光X線<br>分析装置                          | スラブ位置<br>検出器                 | ガス<br>クロマトグラフ             | 硫黄<br>分析計        | たばこ量目<br>制御装置                     | 静電除去<br>装置                       | ガス<br>検知器       | その他        |
|------------------------------|-----------------|------------------|---------------------|-----------------|-------------------|--------------------|---------------------------------------|------------------------------|---------------------------|------------------|-----------------------------------|----------------------------------|-----------------|------------|
|                              |                 | Radio-<br>graphy | Thickness<br>Gauges | Level<br>Gauges | Density<br>Gauges | Moisture<br>Gauges | X-ray<br>Fluorescence<br>Spectrometer | Slab<br>Position<br>Detector | Gas<br>Chromato-<br>graph | Sulfur<br>Meters | Cigarette<br>Weight<br>controller | Electric<br>Static<br>Eliminator | Gas<br>Detector | Others     |
| <b>総数</b><br><b>Total</b>    |                 | <b>110</b>       | <b>423</b>          | <b>162</b>      | <b>69</b>         | <b>18</b>          | <b>23</b>                             | <b>4</b>                     | <b>288</b>                | <b>33</b>        | <b>8</b>                          | <b>8</b>                         | <b>10</b>       | <b>110</b> |
| 1                            |                 | 36               | 88                  | 16              | 28                | 6                  | 4                                     | 1                            | 158                       | 7                | -                                 | 3                                | 1               | 31         |
| 2 ~ 5                        |                 | 43               | 211                 | 66              | 26                | 6                  | 16                                    | 1                            | 122                       | 17               | 1                                 | 5                                | 7               | 48         |
| 6 ~ 10                       |                 | 12               | 68                  | 56              | 9                 | 6                  | 3                                     | 1                            | 6                         | 7                | -                                 | -                                | 1               | 13         |
| 11 ~ 20                      |                 | 5                | 29                  | 17              | 2                 | -                  | -                                     | 1                            | 1                         | 2                | 3                                 | -                                | 1               | 7          |
| 21 and over                  |                 | 14               | 27                  | 7               | 4                 | -                  | -                                     | -                            | 1                         | -                | 4                                 | -                                | -               | 11         |

### 2.3.4 非破壊検査装置およびおもな装備機器の使用許可・届出台数(機器の種類別, 核種別)

Number of -Ray Radiography Apparatus and Major Isotope Gauges in Use in Industrial Firms by Nuclide  
(as of March 31, 2008)

| 核種<br>Nuclides                   | 機器<br>Apparatus | 総数<br>Total       | 非破壊<br>検査装置      | 厚さ計                 | レベル計            | 密度計               | 水分計                | 蛍光X線<br>分析装置                          | スラブ位置<br>検出器                 | ガス<br>クロマトグラフ             | 硫黄<br>分析計        | たばこ量目<br>制御装置                     | 静電除去<br>装置                       | ガス<br>検知器       | その他          |
|----------------------------------|-----------------|-------------------|------------------|---------------------|-----------------|-------------------|--------------------|---------------------------------------|------------------------------|---------------------------|------------------|-----------------------------------|----------------------------------|-----------------|--------------|
|                                  |                 | 構成比<br>(Ratio%)   | Radio-<br>graphy | Thickness<br>Gauges | Level<br>Gauges | Density<br>Gauges | Moisture<br>Gauges | X-ray<br>Fluorescence<br>Spectrometer | Slab<br>Position<br>Detector | Gas<br>Chromato-<br>graph | Sulfur<br>Meters | Cigarette<br>Weight<br>controller | Electric<br>Static<br>Eliminator | Gas<br>Detector | Others       |
| <b>総数</b><br><b>Total</b>        |                 | <b>9,489</b> 100% | <b>904</b>       | <b>2,484</b>        | <b>1,143</b>    | <b>430</b>        | <b>69</b>          | <b>60</b>                             | <b>22</b>                    | <b>1,355</b>              | <b>140</b>       | <b>177</b>                        | <b>16</b>                        | <b>51</b>       | <b>2,638</b> |
| <sup>3</sup> H                   |                 | 1,385 14.6        | -                | -                   | -               | -                 | -                  | -                                     | -                            | 12                        | -                | -                                 | -                                | -               | 1,373        |
| <sup>55</sup> Fe                 |                 | 46 0.5            | -                | 6                   | -               | -                 | -                  | 35                                    | -                            | -                         | 1                | -                                 | -                                | -               | 4            |
| <sup>60</sup> Co                 |                 | 562 5.9           | 134              | -                   | 347             | 2                 | -                  | -                                     | 19                           | -                         | -                | -                                 | -                                | -               | 60           |
| <sup>63</sup> Ni                 |                 | 1,412 14.9        | -                | -                   | -               | -                 | -                  | -                                     | -                            | 1,343                     | -                | -                                 | -                                | 51              | 18           |
| <sup>85</sup> Kr                 |                 | 1,383 14.6        | -                | 1,346               | -               | 7                 | -                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | 30           |
| <sup>90</sup> Sr                 |                 | 353 3.7           | -                | 173                 | -               | 3                 | -                  | -                                     | -                            | -                         | -                | 177                               | -                                | -               | -            |
| <sup>137</sup> Cs                |                 | 1,154 12.2        | 18               | 75                  | 794             | 141               | -                  | -                                     | 3                            | -                         | -                | -                                 | -                                | -               | 123          |
| <sup>147</sup> Pm                |                 | 276 2.9           | -                | 253                 | -               | -                 | -                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | 23           |
| <sup>192</sup> Ir                |                 | 665 7.0           | 665              | -                   | -               | -                 | -                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | -            |
| <sup>204</sup> Tl                |                 | -                 | -                | -                   | -               | -                 | -                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | -            |
| <sup>210</sup> Po                |                 | 16 0.2            | -                | -                   | -               | -                 | -                  | -                                     | -                            | -                         | -                | -                                 | 12                               | -               | 4            |
| <sup>226</sup> Ra                |                 | -                 | -                | -                   | -               | -                 | -                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | -            |
| <sup>241</sup> Am                |                 | 1,580 16.7        | 3                | 623                 | 2               | 277               | 1                  | 2                                     | -                            | -                         | 139              | -                                 | -                                | -               | 533          |
| <sup>241</sup> Am/ <sup>Be</sup> |                 | 59 0.6            | -                | -                   | -               | -                 | 59                 | -                                     | -                            | -                         | -                | -                                 | -                                | -               | -            |
| <sup>252</sup> Cf                |                 | 4 0.0             | -                | -                   | -               | -                 | 4                  | -                                     | -                            | -                         | -                | -                                 | -                                | -               | -            |
| Other                            |                 | 594 6.3           | 84               | 8                   | -               | -                 | 5                  | 23                                    | -                            | -                         | -                | 4                                 | -                                | -               | 470          |

### 2.3.5 非破壊検査装置およびおもな装備機器の使用許可・届出台数 (機器の種類別, 都道府県別)

Number of -Ray Radiography Apparatus and Major Isotope Gauges in Use in Industrial Firms  
by Prefecture (as of March 31, 2008)

| 都道府県<br>Prefecture | 非破壊<br>検査装置<br>Radio-<br>graphy<br>I&O |     | 厚さ計<br>Thickness<br>Gauges<br>I&O |     | レベル計<br>Level<br>Gauges<br>I&O |     | 密度計<br>Density<br>Gauges<br>I&O |    | 水分計<br>Moisture<br>Gauges<br>I&O |    | 蛍光X線<br>分析装置<br>X-ray<br>Fluorescence<br>Spectrometer<br>I&O |    | スラブ位置<br>検出器<br>Slab<br>Position<br>Detector<br>I&O |   | ガス<br>クロマトグラ<br>フ<br>Gas<br>Chromato-<br>graph<br>I&O |     | 硫黄分析計<br>Sulfur<br>Meters<br>I&O |    | たばこ量目<br>制御装置<br>Cigarette<br>Weight<br>controller<br>I&O |   | 静電除去<br>装置<br>Electric<br>Static<br>Eliminator<br>I&O |   | ガス<br>検知器<br>Gas<br>Detector<br>I&O |    | その他<br>Others<br>I&O |     |
|--------------------|--|-----|-----------------------------------|-----|--------------------------------|-----|---------------------------------|----|----------------------------------|----|--|----|---|---|---|-----|----------------------------------|----|---|---|---|---|-------------------------------------|----|----------------------|-----|
|                    | 904                                    | 110 | 2,484                             | 423 | 1,143                          | 162 | 430                             | 69 | 69                               | 18 | 60   | 23 | 22  | 4 | 1,355   | 288 | 140                              | 33 | 177   | 8 | 16  | 8 | 51                                  | 10 | 2,638                | 110 |
| 全 国 Total          | 904                                    | 110 | 2,484                             | 423 | 1,143                          | 162 | 430                             | 69 | 69                               | 18 | 60   | 23 | 22  | 4 | 1,355   | 288 | 140                              | 33 | 177   | 8 | 16  | 8 | 51                                  | 10 | 2,638                | 110 |
| 100 北 海 道          | 7                                      | 4   | 71                                | 10  | 41                             | 10  | 14                              | 5  | -                                | -  | -  | -  | -   | - | 20  | 12  | 1                                | 1  | -   | - | -   | - | -                                   | -  | 10                   | 2   |
| 201 青 森            | 22                                     | 1   | 29                                | 1   | 8                              | 2   | 4                               | 2  | -                                | -  | -  | -  | -   | - | 2   | 2   | -                                | -  | -   | - | -   | - | -                                   | -  | 23                   | 3   |
| 202 岩 手            | -                                      | -   | 16                                | 5   | 4                              | 1   | -                               | -  | -                                | -  | 2  | 1  | -   | - | 2   | 2   | -                                | -  | 18  | 1 | -   | - | -                                   | -  | -                    | -   |
| 203 宮 城            | -                                      | -   | 53                                | 4   | 25                             | 4   | 1                               | 1  | -                                | -  | 3  | 2  | -   | - | -   | -   | 7                                | 1  | -   | - | -   | - | -                                   | -  | 9                    | 2   |
| 204 秋 田            | 2                                      | 2   | 7                                 | 1   | 10                             | 2   | 5                               | 1  | 1                                | 1  | -  | -  | -   | - | 6   | 3   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 205 山 形            | -                                      | -   | 18                                | 2   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 7   | 4   | -                                | -  | -   | - | 3   | 1 | -                                   | -  | -                    | -   |
| 206 福 島            | 5                                      | 3   | 70                                | 16  | 18                             | 2   | -                               | -  | 1                                | 1  | -  | -  | -   | - | 16  | 10  | -                                | -  | 22  | 1 | -   | - | -                                   | -  | 23                   | 2   |
| 301 茨 城            | 32                                     | 5   | 149                               | 28  | 91                             | 9   | 4                               | 2  | 7                                | 1  | -  | -  | -   | - | 17  | 13  | 4                                | 1  | -   | - | -   | - | -                                   | -  | 34                   | 10  |
| 302 栃 木            | 1                                      | 1   | 56                                | 14  | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 11  | 6   | -                                | -  | -   | - | -   | - | -                                   | -  | 29                   | 2   |
| 303 群 馬            | 1                                      | 1   | 13                                | 5   | 4                              | 1   | -                               | -  | -                                | -  | -  | -  | -   | - | 5   | 4   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 304 埼 玉            | 4                                      | 2   | 98                                | 21  | -                              | -   | 6                               | 1  | -                                | -  | 7  | 3  | -   | - | 22  | 15  | -                                | -  | -   | - | 6   | 2 | -                                   | -  | 17                   | 6   |
| 305 千 葉            | 154                                    | 6   | 130                               | 20  | 158                            | 14  | 122                             | 3  | 7                                | 2  | 8  | 1  | -   | - | 30  | 12  | 19                               | 5  | -   | - | -   | - | 22                                  | 2  | 17                   | 7   |
| 306 東 京            | 3                                      | 2   | 61                                | 6   | 10                             | 2   | 123                             | 2  | -                                | -  | 7  | 2  | -   | - | 63  | 24  | 6                                | 1  | 16  | 1 | 4   | 3 | 1                                   | 1  | 1841                 | 20  |
| 307 神 奈 川          | 124                                    | 13  | 56                                | 13  | 135                            | 13  | 21                              | 6  | 5                                | 1  | 4  | 2  | 7   | 1 | 48  | 22  | 13                               | 6  | 24  | 1 | -   | - | -                                   | -  | 88                   | 8   |
| 401 新 潟            | 9                                      | 5   | 58                                | 9   | 9                              | 2   | 2                               | 1  | -                                | -  | -  | -  | -   | - | 5   | 3   | -                                | -  | -   | - | -   | - | -                                   | -  | 32                   | 4   |
| 402 富 山            | 5                                      | 2   | 30                                | 10  | 22                             | 4   | 14                              | 2  | -                                | -  | -  | -  | -   | - | 7   | 5   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 403 石 川            | -                                      | -   | 5                                 | 2   | -                              | -   | 4                               | 1  | -                                | -  | 6  | 1  | -   | - | 3   | 3   | -                                | -  | 5   | 1 | -   | - | -                                   | -  | 9                    | 1   |
| 404 福 井            | -                                      | -   | 38                                | 8   | 35                             | 3   | -                               | -  | -                                | -  | -  | -  | -   | - | 5   | 3   | -                                | -  | -   | - | -   | - | 12                                  | 3  | 108                  | 4   |
| 405 山 梨            | 2                                      | 1   | 6                                 | 1   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | -   | -   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 406 長 野            | 2                                      | 1   | 7                                 | 3   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 9   | 5   | -                                | -  | -   | - | -   | - | -                                   | -  | 3                    | 2   |
| 407 岐 阜            | -                                      | -   | 83                                | 18  | 5                              | 1   | 1                               | 1  | 1                                | 1  | -  | -  | -   | - | 4   | 4   | -                                | -  | -   | - | -   | - | -                                   | -  | 4                    | 2   |
| 408 静 岡            | 2                                      | 1   | 218                               | 46  | 18                             | 6   | 22                              | 4  | -                                | -  | -  | -  | -   | - | 17  | 11  | -                                | -  | 40  | 1 | -   | - | -                                   | -  | 19                   | 2   |
| 409 愛 知            | 21                                     | 5   | 160                               | 23  | 53                             | 11  | 5                               | 4  | 8                                | 1  | -  | -  | 2   | 1 | 42  | 27  | 2                                | 1  | -   | - | -   | - | 3                                   | 1  | 74                   | 2   |
| 501 三 重            | 5                                      | 2   | 55                                | 11  | 61                             | 9   | 1                               | 1  | -                                | -  | -  | -  | -   | - | 8   | 4   | 22                               | 2  | -   | - | -   | - | -                                   | -  | 2                    | 1   |
| 502 滋 賀            | -                                      | -   | 104                               | 20  | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 13  | 5   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 503 京 都            | 3                                      | 1   | 29                                | 4   | 36                             | 1   | -                               | -  | -                                | -  | -  | -  | -   | - | 833   | 7   | -                                | -  | 41  | 1 | 2   | 1 | -                                   | -  | 186                  | 4   |
| 504 大 阪            | 168                                    | 9   | 69                                | 19  | 24                             | 4   | 21                              | 4  | -                                | -  | 4  | 2  | -   | - | 44  | 23  | 11                               | 3  | -   | - | -   | - | 7                                   | 2  | 23                   | 6   |
| 505 兵 庫            | 50                                     | 14  | 161                               | 18  | 13                             | 4   | 8                               | 4  | 5                                | 3  | 4  | 2  | 1   | 1 | 45  | 23  | -                                | -  | -   | - | 1   | 1 | -                                   | -  | 22                   | 9   |
| 506 奈 良            | -                                      | -   | 7                                 | 3   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 1   | 1   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 507 和 歌 山          | 1                                      | 1   | 44                                | 3   | 1                              | 1   | -                               | -  | 3                                | 1  | 2  | 1  | -   | - | -   | -   | 2                                | 2  | -   | - | -   | - | -                                   | -  | 2                    | 1   |
| 601 鳥 取            | 1                                      | 1   | 31                                | 2   | 2                              | 1   | -                               | -  | -                                | -  | -  | -  | -   | - | -   | -   | -                                | -  | 11  | 1 | -   | - | -                                   | -  | -                    | -   |
| 602 鳥 根            | -                                      | -   | 29                                | 4   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | -   | -   | -                                | -  | -   | - | -   | - | -                                   | -  | 4                    | 1   |
| 603 岡 山            | 2                                      | 1   | 104                               | 13  | 87                             | 12  | 5                               | 5  | 6                                | 1  | 4  | 2  | -   | - | 3   | 3   | 12                               | 3  | -   | - | -   | - | -                                   | -  | 3                    | 1   |
| 604 広 島            | 137                                    | 8   | 94                                | 9   | 33                             | 7   | 9                               | 6  | 16                               | 2  | 2  | 1  | -   | - | 9   | 4   | -                                | -  | -   | - | -   | - | -                                   | -  | 2                    | 1   |
| 605 山 口            | 9                                      | 3   | 78                                | 8   | 71                             | 9   | 2                               | 2  | 2                                | 1  | -  | -  | -   | - | 4   | 3   | 20                               | 3  | -   | - | -   | - | -                                   | -  | 1                    | 1   |
| 606 徳 島            | -                                      | -   | 47                                | 9   | 8                              | 2   | 3                               | 3  | -                                | -  | -  | -  | -   | - | 5   | 3   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 607 香 川            | 1                                      | 1   | 9                                 | 4   | 2                              | 1   | -                               | -  | -                                | -  | -  | -  | -   | - | 4   | 1   | 12                               | 1  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 608 愛 媛            | 1                                      | 1   | 80                                | 10  | 80                             | 10  | 8                               | 1  | -                                | -  | -  | -  | -   | - | 13  | 5   | -                                | -  | -   | - | -   | - | -                                   | -  | 23                   | 1   |
| 609 高 知            | -                                      | -   | 9                                 | 5   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 2   | 1   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 701 福 岡            | 84                                     | 4   | 36                                | 4   | 23                             | 5   | 1                               | 1  | 2                                | 1  | 3  | 2  | -   | - | 10  | 5   | 2                                | 1  | -   | - | -   | - | 6                                   | 1  | 3                    | 1   |
| 702 佐 賀            | -                                      | -   | 4                                 | 2   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | -   | -   | -                                | -  | -   | - | -   | - | -                                   | -  | 14                   | 1   |
| 703 長 崎            | 42                                     | 8   | -                                 | -   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 12  | 4   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 704 熊 本            | 4                                      | 1   | 26                                | 4   | 10                             | 1   | 1                               | 1  | -                                | -  | 4  | 1  | -   | - | 5   | 3   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 705 大 分            | -                                      | -   | 6                                 | 2   | 31                             | 4   | 11                              | 2  | 5                                | 1  | -  | -  | 12  | 1 | -   | -   | 5                                | 1  | -   | - | -   | - | -                                   | -  | 7                    | 2   |
| 706 宮 崎            | -                                      | -   | 21                                | 2   | 11                             | 3   | 10                              | 2  | -                                | -  | -  | -  | -   | - | 1   | 1   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |
| 707 鹿 児 島          | -                                      | -   | 9                                 | 1   | 4                              | 1   | 2                               | 1  | -                                | -  | -  | -  | -   | - | 1   | 1   | 2                                | 1  | -   | - | -   | - | -                                   | -  | 6                    | 1   |
| 708 沖 縄            | -                                      | -   | -                                 | -   | -                              | -   | -                               | -  | -                                | -  | -  | -  | -   | - | 1   | 1   | -                                | -  | -   | - | -   | - | -                                   | -  | -                    | -   |

注1 I&O 欄は許可・届出事業所数。

Note:1 I&O shows the number of industrial firms using apparatus or gauges.

### 2.3.6 線照射装置の使用許可・届出台数 (放射能別)

Number of  $\gamma$ -Ray Irradiation Facilities in Use in Industrial Firms  
(as of March 31, 2008)

| 放射能<br>Activity<br>台数<br>Number of $\gamma$ -Ray Irradiation Facilities | 総数<br>Total | less than<br>10GBq | 10GBq ~<br>less than<br>0.1TBq | 0.1TBq ~<br>less than<br>1TBq | 1TBq ~<br>less than<br>10TBq | 10TBq ~<br>less than<br>100TBq | 100TBq<br>and over |
|---|-------------|--------------------|--------------------------------|-------------------------------|------------------------------|--------------------------------|--------------------|
|   |             |                    |                                |                               |                              |                                |                    |
| 許可・届出台数   | 79          | 11                 | 19                             | 5                             | 26                           | 6                              | 12                 |
| I&O   |             | 7                  | 14                             | 5                             | 18                           | 3                              | 7                  |

注 I&O 欄は許可・届出事業所数。

Note: I&O shows the number of licensed industrial firms.

## 2.4 その他の機関 Other Organizations

### 2.4.1 非破壊検査装置およびおもな装備機器の使用許可・届出台数(機器の種類別, 核種別)

Number of  $\gamma$ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Other Organizations by Nuclide  
(as of March 31, 2008)

| 核種<br>Nuclides      | 機器<br>Apparatus |                 | 非破壊<br>検査装置<br>Radio-<br>graphy | 厚さ計<br>Thickness<br>Gauges | レベル計<br>Level<br>Gauges | 密度計<br>Density<br>Gauges | 水分計<br>Moisture<br>Gauges | 蛍光X線<br>分析装置<br>X-ray<br>Fluorescence<br>Spectrometer | スラブ位置<br>検出器<br>Slab<br>Position<br>Detector | ガス<br>クロマト<br>グラフ<br>Gas<br>Chromato-<br>graph | 硫黄<br>分析計<br>Sulfur<br>Meters | たばこ量目<br>制御装置<br>Cigarette<br>Weight<br>controller | 静電除去<br>装置<br>Electric<br>Static<br>Eliminator | ガス<br>検知器<br>Gas<br>Detector | その他<br>Others |
|---------------------|-----------------|-----------------|---------------------------------|----------------------------|-------------------------|--------------------------|---------------------------|---|--|--|-------------------------------|--|--|------------------------------|---------------|
|                     | 総数<br>Total     | 構成比<br>(Ratio%) |                                 |                            |                         |                          |                           |   |  |  |                               |  |  |                              |               |
| <b>総数<br/>Total</b> | <b>1,259</b>    | <b>100%</b>     | <b>41</b>                       | <b>3</b>                   | -                       | -                        | -                         | -   | -  | <b>378</b>                                     | -                             | -  | -  | <b>3</b>                     | <b>834</b>    |
| $^3\text{H}$        | 467             | 37.1            | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 467           |
| $^{55}\text{Fe}$    | -               | -               | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | -             |
| $^{60}\text{Co}$    | 28              | 2.2             | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 28            |
| $^{63}\text{Ni}$    | 409             | 32.5            | -                               | -                          | -                       | -                        | -                         | -   | -  | 378  | -                             | -  | -  | 3                            | 28            |
| $^{85}\text{Kr}$    | 5               | 0.4             | -                               | 3                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 2             |
| $^{137}\text{Cs}$   | 126             | 10.0            | 1                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 125           |
| $^{147}\text{Pm}$   | -               | -               | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | -             |
| $^{192}\text{Ir}$   | -               | -               | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | -             |
| $^{210}\text{Po}$   | -               | -               | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | -             |
| $^{241}\text{Am}$   | 6               | 0.5             | -                               | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 6             |
| Others              | 218             | 17.3            | 40                              | -                          | -                       | -                        | -                         | -   | -  | -  | -                             | -  | -  | -                            | 178           |

### 2.4.2 線照射装置の使用許可・届出台数(放射能別)

Number of  $\gamma$ -Ray Irradiation Facilities in Use in Other Organizations  
(as of March 31, 2008)

| 台数<br>Number of<br>$\gamma$ -Ray<br>Irradiation<br>Facilities | 放射能<br>Activity |  | less than<br>10GBq | 10GBq ~<br>less than<br>0.1TBq | 0.1TBq ~<br>less than<br>1TBq | 1TBq ~<br>less than<br>10TBq | 10TBq ~<br>less than<br>100TBq | 100TBq<br>and over |
|---|-----------------|--|--------------------|--------------------------------|-------------------------------|------------------------------|--------------------------------|--------------------|
|   | 総数<br>Total     |  |                    |                                |                               |                              |                                |                    |
| 許可・届出台数   | 22              |  | 6                  | 5                              | 1                             | 3                            | -                              | 7                  |
| I&O   |                 |  | 4                  | 4                              | 1                             | 2                            | -                              | 6                  |

注 I&O 欄は許可・届出事業所数。

Note: I&O shows the number of licensed industrial firms and other organizations.

### 3 アイソトープの流通状況 DISTRIBUTION OF RADIOISOTOPES

#### 3.1 おもな非密封アイソトープの供給量

Amounts of Major Unsealed Radioisotopes Distributed

#### 3.1.1 おもな非密封アイソトープの供給量の推移(核種別, 年度別)

Amounts of Major Unsealed Radioisotopes Distributed in Fiscal 2003-2007

[MBq]

| 核種 Nuclides              | 年度 Year | 2003      | 2004      | 2005      | 2006      | 2007      |
|--------------------------|---------|-----------|-----------|-----------|-----------|-----------|
| <sup>3</sup> H Total     |         | 471,123   | 4,208,400 | 4,058,977 | 259,890   | 226,522   |
| (標識化合物 Labeled compound) |         | 470,997   | 508,398   | 358,973   | 215,488   | 225,516   |
| <sup>14</sup> C Total    |         | 298,153   | 371,932   | 331,595   | 291,424   | 217,018   |
| (標識化合物 Labeled compound) |         | 298,124   | 371,932   | 331,595   | 291,422   | 217,017   |
| <sup>18</sup> F          |         | .         | .         | 8,066     | 23,125    | 29,970    |
| <sup>22</sup> Na         |         | 289       | 315       | 245       | 386       | 464       |
| <sup>32</sup> P Total    |         | 505,918   | 433,445   | 363,822   | 308,317   | 237,060   |
| (標識化合物 Labeled compound) |         | 395,146   | 323,240   | 270,894   | 220,976   | 181,609   |
| <sup>33</sup> P Total    |         | 39,063    | 51,814    | 58,365    | 46,796    | 67,902    |
| (標識化合物 Labeled compound) |         | 35,668    | 46,245    | 47,318    | 42,698    | 62,788    |
| <sup>35</sup> S Total    |         | 259,805   | 225,080   | 207,329   | 169,652   | 132,149   |
| (標識化合物 Labeled compound) |         | 249,667   | 216,015   | 196,599   | 160,290   | 125,043   |
| <sup>45</sup> Ca         |         | 3,737     | 4,524     | 3,711     | 2,400     | 3,701     |
| <sup>51</sup> Cr         |         | 100,724   | 93,875    | 85,040    | 79,368    | 69,349    |
| <sup>54</sup> Mn         |         | 189       | 145       | 74        | 228       | 452       |
| <sup>55</sup> Fe         |         | 703       | 407       | 962       | 598       | 296       |
| <sup>57</sup> Co         |         | 296       | 604       | 617       | 148       | 439       |
| <sup>59</sup> Fe         |         | 13,376    | 12,573    | 712       | 400       | 525       |
| <sup>60</sup> Co         |         | 341       | 189       | 4         | 39        | 19        |
| <sup>63</sup> Ni *       |         | 482,057   | 518,539   | 150,795   | 41        | 4         |
| <sup>65</sup> Zn         |         | 160       | 217       | 316       | 101       | 162       |
| <sup>67</sup> Ga         |         | 925       | 703       | 407       | 1,591     | 296       |
| <sup>68</sup> Ge         |         | 1,295     | 2,335     | 1,488     | 1,891     | 1,339     |
| <sup>75</sup> Se         |         | 112       | 441       | 233       | 949       | 185       |
| <sup>85</sup> Kr         |         | 333,740   | 424,391   | 325,601   | 623,364   | 531,721   |
| <sup>85</sup> Sr         |         | 557       | 298       | 121       | 128       | 119       |
| <sup>86</sup> Rb         |         | 5,550     | 2,812     | 1,184     | 925       | 777       |
| <sup>90</sup> Y          |         | 5,219     | -         | 740       | 19        | 6,179     |
| <sup>99</sup> Mo         |         | 142,450   | 114,700   | 102,680   | 140,605   | 118,405   |
| <sup>99m</sup> Tc        |         | 28,083    | 77,589    | 27,380    | 33,559    | 43,290    |
| <sup>109</sup> Cd        |         | 267       | 167       | 259       | 108       | 13        |
| <sup>111</sup> In        |         | 2,257     | 1,998     | 2,368     | 1,739     | 3,794     |
| <sup>123</sup> I         |         | 7,670     | 5,772     | 2,302     | 1,676     | 4,555     |
| <sup>125</sup> I Total   |         | 271,854   | 268,321   | 256,460   | 196,991   | 176,841   |
| (標識化合物 Labeled compound) |         | 8,252     | 6,453     | 5,559     | 5,306     | 7,219     |
| <sup>131</sup> I         |         | 133,036   | 224,864   | 79,852    | 21,178    | 26,523    |
| <sup>133</sup> Xe        |         | 2,000     | 1,110     | 1,480     | 4,070     | -         |
| <sup>137</sup> Cs        |         | 600       | 858       | 1,005     | 123       | 79        |
| <sup>141</sup> Ce        |         | 167       | 74        | 19        | 37        | 19        |
| <sup>186</sup> Re        |         | -         | -         | -         | 6,680     | 6,440     |
| <sup>201</sup> Tl        |         | 2,368     | 2,519     | 962       | 3,848     | 2,442     |
| その他 Other                |         | 1,838     | 1,715     | 2,062     | 1,052     | 1,045     |
| 合計 Total                 |         | 3,115,919 | 7,052,722 | 6,077,232 | 2,223,446 | 1,910,094 |
| 供給先事業所数                  |         | .         | .         | 704       | 663       | 623       |

注 100 MBq以下の核種については省略した。

Note: The radionuclides below 100MBq are omitted.

## 3.1.2 おもな非密封アイソトープの供給量(核種別, 機関別)

Amounts of Major Unsealed Radioisotopes Distributed by Category of Organizations in Fiscal 2007

〔MBq〕

| 核種<br>Nuclides    | 機関<br>Category | 総数<br>Total | 医療機関<br>Hospitals<br>& Clinics | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|-------------------|----------------|-------------|--------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| <sup>3</sup> H    |                | 226,522     | 1,926                          | 38,656                               | 163,114                          | 22,788                      | 38                               |
| <sup>14</sup> C   |                | 217,018     | 451                            | 5,268                                | 189,591                          | 21,706                      | 2                                |
| <sup>18</sup> F   |                | 29,970      | -                              | 4,995                                | 24,605                           | 185                         | 185                              |
| <sup>22</sup> Na  |                | 464         | -                              | 197                                  | 267                              | -                           | -                                |
| <sup>32</sup> P   |                | 237,060     | 2,620                          | 118,605                              | 108,350                          | 7,069                       | 416                              |
| <sup>33</sup> P   |                | 67,902      | -                              | 4,089                                | 63,776                           | -                           | 37                               |
| <sup>35</sup> S   |                | 132,149     | 1,371                          | 91,265                               | 39,115                           | 342                         | 56                               |
| <sup>45</sup> Ca  |                | 3,701       | 148                            | 2,701                                | 778                              | 74                          | -                                |
| <sup>51</sup> Cr  |                | 69,349      | 1,813                          | 48,646                               | 15,412                           | 3,460                       | 19                               |
| <sup>54</sup> Mn  |                | 452         | -                              | 351                                  | 101                              | -                           | -                                |
| <sup>55</sup> Fe  |                | 296         | -                              | 37                                   | 259                              | -                           | 0                                |
| <sup>57</sup> Co  |                | 439         | -                              | 111                                  | 37                               | 291                         | -                                |
| <sup>59</sup> Fe  |                | 525         | -                              | 413                                  | 93                               | -                           | 19                               |
| <sup>60</sup> Co  |                | 19          | -                              | 2                                    | 16                               | 1                           | 0                                |
| <sup>63</sup> Ni  |                | 4           | -                              | -                                    | 4                                | -                           | -                                |
| <sup>65</sup> Zn  |                | 162         | -                              | 75                                   | 87                               | -                           | -                                |
| <sup>67</sup> Ga  |                | 296         | -                              | 222                                  | 74                               | -                           | -                                |
| <sup>68</sup> Ge  |                | 1,339       | -                              | -                                    | 965                              | 374                         | -                                |
| <sup>75</sup> Se  |                | 185         | -                              | -                                    | 185                              | -                           | -                                |
| <sup>85</sup> Kr  |                | 531,721     | -                              | -                                    | 401                              | 531,320                     | -                                |
| <sup>85</sup> Sr  |                | 119         | -                              | 19                                   | 96                               | 4                           | -                                |
| <sup>86</sup> Rb  |                | 777         | -                              | 111                                  | 666                              | -                           | -                                |
| <sup>90</sup> Y   |                | 6,179       | -                              | 2,590                                | 185                              | 3,330                       | 74                               |
| <sup>99</sup> Mo  |                | 118,405     | 59,200                         | 44,405                               | 8,325                            | 6,475                       | -                                |
| <sup>99m</sup> Tc |                | 43,290      | -                              | 14,245                               | 21,275                           | 7,770                       | 0                                |
| <sup>109</sup> Cd |                | 13          | -                              | 12                                   | 0                                | 1                           | -                                |
| <sup>111</sup> In |                | 3,794       | -                              | 925                                  | 2,553                            | 316                         | -                                |
| <sup>123</sup> I  |                | 4,555       | -                              | 1,669                                | 2,886                            | -                           | -                                |
| <sup>125</sup> I  |                | 176,840     | 638                            | 30,836                               | 25,239                           | 120,128                     | 0                                |
| <sup>131</sup> I  |                | 26,522      | -                              | 5,302                                | 2,410                            | 18,681                      | 130                              |
| <sup>133</sup> Xe |                | 4,070       | -                              | -                                    | 4,070                            | -                           | -                                |
| <sup>137</sup> Cs |                | 79          | -                              | 1                                    | 78                               | 0                           | 0                                |
| <sup>141</sup> Ce |                | 19          | 19                             | -                                    | -                                | -                           | -                                |
| <sup>186</sup> Re |                | 6,440       | 4,500                          | 740                                  | 1,200                            | -                           | -                                |
| <sup>201</sup> Tl |                | 2,442       | -                              | 592                                  | 1,850                            | -                           | -                                |
| その他 Other         |                | 1,045       | 200                            | 752                                  | 89                               | 4                           | 0                                |
| 合計                |                | 1,910,094   | 72,886                         | 417,832                              | 674,082                          | 744,319                     | 975                              |

注 100 MBq以下の核種については省略した。

Note: The radionuclides below 100MBq are omitted.

3.2 おもな密封アイソトープの供給量  
Amounts of Major Sealed Radioisotopes Distributed

3.2.1 おもな密封アイソトープの供給量の推移(核種別、年度別)  
Amounts of Major Sealed Radioisotopes Distributed in Fiscal 2003-2007

[MBq]

| 核種<br>Nuclides         | 年度<br>Year | 2003            | 2004            | 2005            | 2006            | 2007           |
|------------------------|------------|-----------------|-----------------|-----------------|-----------------|----------------|
| <sup>3</sup> H Target* |            | 63,600,000      | 121,992,860     | -               | 40,700          | 49,600,000     |
| <sup>22</sup> Na       |            | 7,400           | 1,110           | 6,290           | 3,700           | 5,021          |
| <sup>55</sup> Fe       |            | 5,365           | 7,400           | 6,845           | -               | 17,760         |
| <sup>57</sup> Co       |            | 34,965          | 26,660          | 26,455          | 21,090          | 18,787         |
| <sup>60</sup> Co       |            | 115,327,224,864 | 172,056,426,880 | 158,280,600,085 | 141,091,767,039 | 96,625,311,816 |
| <sup>63</sup> Ni       |            | 381,100         | 617,530         | 268,220         | 393,495         | 458,800        |
| <sup>68</sup> Ge       |            | 50,373          | 51,934          | 62,913          | 56,611          | 56,517         |
| <sup>85</sup> Kr       |            | 1,362,340       | 1,055,980       | 996,780         | 1,400,820       | 1,485,920      |
| <sup>90</sup> Sr       |            | 8,954           | 8,230           | 11,100          | 10,434          | 5,275          |
| <sup>109</sup> Cd      |            | 444             | 333             | 888             | -               | -              |
| <sup>119m</sup> Sn     |            | 370             | 370             | 1,295           | 1,665           | 1,665          |
| <sup>125</sup> I       |            | 126,383         | 978,272         | 1,783,136       | 2,192,451       | 2,745,944      |
| <sup>137</sup> Cs      |            | 415,296,647     | 273,345,586     | 4,647,757       | 3,403,504       | 21,601,346     |
| <sup>147</sup> Pm      |            | 855,255         | 683,600         | 712,250         | 746,955         | 836,385        |
| <sup>151</sup> Sm      |            | -               | -               | -               | -               | -              |
| <sup>153</sup> Gd      |            | 76,220          | 95,460          | 74,000          | 18,500          | 37,000         |
| <sup>169</sup> Yb      |            | 2,960,000       | 2,220,000       | 1,480,000       | 1,480,000       | 1,850,000      |
| <sup>192</sup> Ir      |            | 606,879,160     | 612,176,376     | 647,654,640     | 682,144,024     | 661,107,860    |
| <sup>198</sup> Au      |            | 282,125         | 321,715         | 385,540         | 377,215         | 275,650        |
| <sup>241</sup> Am      |            | 717,800         | 205,350         | 1,124,820       | 832,870         | 609,927        |
| <sup>241</sup> Am+Be   |            | 332,630         | 134,310         | 185,000         | 999             | -              |
| <sup>252</sup> Cf      |            | 100,306         | 2,400           | 16,300          | 72,280          | 20,791         |
| その他 Other              |            | 4,440           | 4,070           | 7,530           | 5,652           | 5,677          |
| 合計 Total               |            | 116,420,307,141 | 173,070,356,426 | 158,940,051,844 | 141,784,970,004 | 97,366,052,141 |

\*非密封アイソトープではあるが、密封線源のように使用されるため統計上は密封に含めた。

\* Although <sup>3</sup>H Target is an unsealed radioisotope, the data are included in this category as it is treated similarly to sealed sources.

注 100 MBq以下の核種については省略した。

Note: The radionuclides below 100MBq are omitted.



### 3.2.2 おもな密封アイソトープの供給量(核種別, 機関別)

Amounts of Major Sealed Radioisotopes Distributed by Category of Organizations in Fiscal 2007

(MBq)

| 核種<br>Nuclides       | 機関<br>Category | 総数<br>Total    | 医療機関<br>Hospitals<br>&Clinics | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|----------------------|----------------|----------------|-------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| <sup>22</sup> Na     |                | 5,021          | 11                            | 1,854                                | 2,039                            | 7                           | 1,110                            |
| <sup>55</sup> Fe     |                | 17,760         | -                             | -                                    | -                                | 17,760                      | -                                |
| <sup>57</sup> Co     |                | 18,787         | -                             | 15,170                               | 3,567                            | 8                           | 42                               |
| <sup>60</sup> Co     |                | 96,625,311,816 | 1,115,698,000                 | 1                                    | 4,663,390,122                    | 90,846,223,683              | 10                               |
| <sup>63</sup> Ni     |                | 458,800        | -                             | -                                    | -                                | 458,800                     | -                                |
| <sup>68</sup> Ge     |                | 56,517         | 53,237                        | 60                                   | 2,252                            | 968                         | -                                |
| <sup>85</sup> Kr     |                | 1,485,920      | -                             | -                                    | -                                | 1,485,920                   | -                                |
| <sup>90</sup> Sr     |                | 5,275          | -                             | 74                                   | 2                                | 5,199                       | -                                |
| <sup>109</sup> Cd    |                | -              | -                             | -                                    | -                                | -                           | -                                |
| <sup>119m</sup> Sn   |                | 1,665          | -                             | 925                                  | 740                              | -                           | -                                |
| <sup>125</sup> I     |                | 2,745,944      | 2,596,475                     | 82,304                               | 67,012                           | -                           | 153                              |
| <sup>137</sup> Cs    |                | 21,601,346     | -                             | 6                                    | 8,151,166                        | 13,450,172                  | 2                                |
| <sup>147</sup> Pm    |                | 836,385        | -                             | -                                    | -                                | 784,585                     | 51,800                           |
| <sup>151</sup> Sm    |                | -              | -                             | -                                    | -                                | -                           | -                                |
| <sup>153</sup> Gd    |                | 37,000         | 37,000                        | -                                    | -                                | -                           | -                                |
| <sup>169</sup> Yb    |                | 1,850,000      | -                             | -                                    | -                                | 1,850,000                   | -                                |
| <sup>192</sup> Ir    |                | 661,107,860    | 150,877,860                   | 1,110,000                            | 8,880,000                        | 500,240,000                 | -                                |
| <sup>198</sup> Au    |                | 275,650        | 275,650                       | -                                    | -                                | -                           | -                                |
| <sup>241</sup> Am    |                | 609,927        | -                             | 4                                    | 4                                | 609,847                     | 72                               |
| <sup>241</sup> Am+Be |                | -              | -                             | -                                    | -                                | -                           | -                                |
| <sup>252</sup> Cf    |                | 20,791         | -                             | 7                                    | 2,040                            | 18,718                      | 26                               |
| その他 Other            |                | 5,677          | 83                            | 4                                    | -                                | 5,220                       | 370                              |
| 合計 Total             |                | 97,366,052,141 | 1,269,538,316                 | 1,210,409                            | 4,730,098,944                    | 91,365,150,887              | 53,585                           |

注 100MBq以下の核種については省略した。

Note: The radionuclides below 100MBq are omitted.

## 3.2.3 密封アイソトープの内、おもな医療用具の供給量(核種別)

Amounts of Major Medical Devices among Sealed Radioisotopes Distributed in Fiscal 2003-2007(by nuclide)

[MBq]

| 使用用途<br>Usage                                   | 核種 Nuclide &<br>数量 Activity                          | 年度 Year       |               |               |             |               |
|---|--|---------------|---------------|---------------|-------------|---------------|
|   |  | 2003          | 2004          | 2005          | 2006        | 2007          |
| 遠隔照射治療<br>用密封線源<br>Teletherapy                  | ガンマナイフ<br>GammaKnife<br>60Co<br>1.11TBq × 201sources | 2,677,320,000 | 3,123,540,000 | 1,338,660,000 | 223,110,000 | 1,115,550,000 |
|   | その他<br>Other<br>60Co<br>37 ~ 111TBq/1source          | 333,000,000   | 185,000,000   | 222,000,000   | -           | 111,000,000   |
| アフターローディング用密封線源<br>High Dose Rate Brachytherapy | 60Co<br>37 ~ 148GBq/1source                          | 1,666,000     | 481,000       | 74,000        | 296,000     | 148,000       |
|   | 192Ir<br>295 ~ 370GBq/1source                        | 146,298,000   | 145,632,000   | 151,256,000   | 151,848,000 | 154,882,000   |
| 治療用密封小線源<br>Low Dose Rate Brachytherapy         | 125I<br>約11 ~ 15MBq/1source                          | 126,383       | 960,269       | 1,783,071     | 2,192,396   | 2,743,450     |
|   | 198Au<br>185MBq/1source                              | 282,125       | 321,715       | 385,540       | 377,215     | 275,650       |
|   | 137Cs<br>数十MBq ~ 数                                   | 34,634        | -             | 17,079        | -           | -             |
|   | 192Ir<br>37MBq ~                                     | 210,160       | 179,376       | 137,640       | 124,024     | 65,860        |
| その他Other  |  | 76,220        | 95,460        | 74,000        | 18,564,000  | 38,748        |
| 合計Total   |  | 3,159,013,522 | 3,456,209,820 | 1,714,387,330 | 396,511,635 | 1,384,703,708 |

注) 表3.2.3は表3.2.1の内集計です。

Note) This table is a partial breakdown of Table 3.2.1.

## 4 アイソトープ廃棄物の集荷・処理 DISPOSAL OF RADIOACTIVE WASTE

### 4.1 アイソトープ廃棄物の集荷 Collected Radioactive Waste

#### 4.1.1 廃棄物集荷数量および事業所数(種類別, 年度別)

Collected Radioactive Waste in Fiscal 1960-2007

(200L容器換算本数 Number stated in terms of 200L container)

| 種類<br>Waste   | 年度<br>Year      | 1960<br>~<br>1996 | 1997           | 1998          | 1999          | 2000          | 2001          | 2002          | 2003          | 2004          | 2005          | 2006          | 2007          |
|---|-----------------|-------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | <b>総数 Total</b> |                   | <b>257,447</b> | <b>16,796</b> | <b>16,709</b> | <b>15,735</b> | <b>18,455</b> | <b>16,133</b> | <b>16,636</b> | <b>15,728</b> | <b>14,313</b> | <b>12,793</b> | <b>11,744</b> |
| <b>固体 Solids</b>  |                 |                   |                |               |               |               |               |               |               |               |               |               |               |
| 可燃物<br>Combustibles Type 1  |                 | 39,531            | 1,635          | 1,467         | 1,331         | 1,330         | 1,295         | 1,364         | 1,268         | 1,166         | 1,045         | 980           | 977           |
| 難燃物*<br>Combustibles Type 2*  |                 | 42,609            | 8,140          | 8,179         | 7,477         | 7,791         | 7,355         | 7,610         | 7,037         | 6,058         | 5,224         | 4,604         | 4,295         |
| 不燃物<br>Incombustibles   |                 | 102,315           | 1,704          | 1,645         | 1,505         | 1,532         | 1,520         | 1,628         | 1,581         | 1,424         | 1,413         | 1,353         | 1,350         |
| スラリー<br>Slurry  |                 | 550               | -              | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             |
| 乾燥動物<br>Dried Animals   |                 | 6,268             | 301            | 246           | 222           | 200           | 202           | 234           | 191           | 176           | 205           | 180           | 222           |
| ホルマリン動物<br>Animals  |                 | 1,258             | -              | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             |
| <b>液体 Liquids</b>   |                 | <b>5,295</b>      | <b>339</b>     | <b>318</b>    | <b>309</b>    | <b>312</b>    | <b>307</b>    | <b>356</b>    | <b>313</b>    | <b>390</b>    | <b>368</b>    | <b>335</b>    | <b>334</b>    |
| フィルター<br>Filters  |                 | 51,221            | 4,349          | 4,328         | 4,382         | 4,083         | 4,456         | 4,552         | 3,960         | 4,008         | 4,021         | 3,600         | 4,170         |
| 非圧縮性不燃物<br>Incompressible Incombustibles  |                 | 8,400             | 328            | 526           | 509           | 3,207         | 998           | 892           | 1,378         | 1,091         | 517           | 692           | 391           |
| <b>集荷事業所数<br/>Number of Establishments<br/>from which Radioactive Waste<br/>was Collected</b> |                 |                   | <b>1,385</b>   | <b>1,442</b>  | <b>1,414</b>  | <b>1,469</b>  | <b>1,449</b>  | <b>1,501</b>  | <b>1,502</b>  | <b>1,512</b>  | <b>1,552</b>  | <b>1,552</b>  | <b>1,580</b>  |

\* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

\* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

## 4.1.2 廃棄物集荷数量および事業所数(種類別, 地区別)

Collected Radioactive Waste by District in Fiscal 2007

(200L容器換算本数 Number stated in terms of 200L containers)

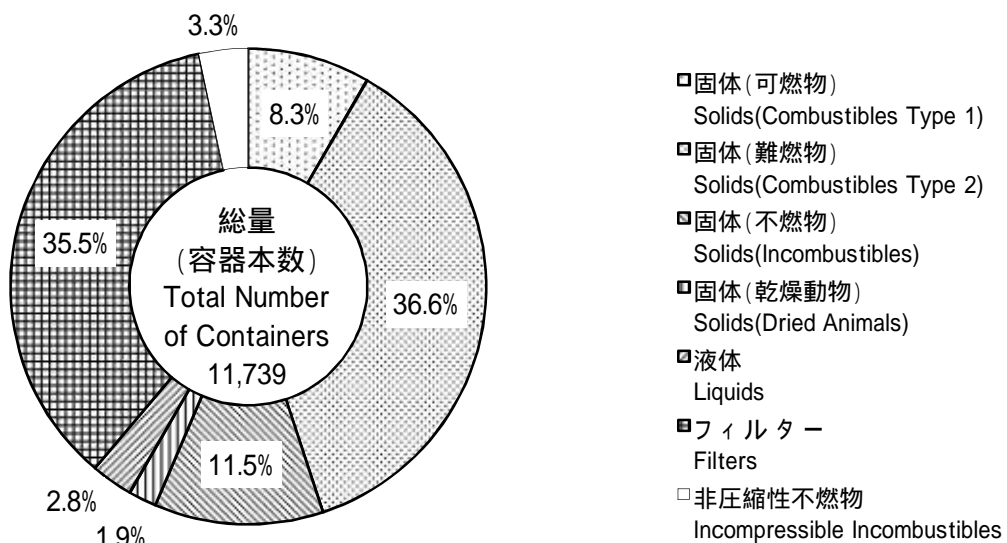
| 種類<br>Waste   | 地域<br>District | 総数<br>Total   | 100<br>北海道 | 200<br>東北  | 300<br>関東    | 400<br>中部    | 500<br>近畿    | 600<br>四国・中国 | 700<br>九州  |
|---|----------------|---------------|------------|------------|--------------|--------------|--------------|--------------|------------|
| <b>総数 Total</b>   |                | <b>11,739</b> | <b>335</b> | <b>487</b> | <b>6,230</b> | <b>1,387</b> | <b>2,194</b> | <b>566</b>   | <b>540</b> |
| <b>固体 Solids</b>  |                |               |            |            |              |              |              |              |            |
| 可燃物<br>Combustibles Type 1  |                | 977           | 23         | 42         | 527          | 108          | 182          | 45           | 50         |
| 難燃物*<br>Combustibles Type 2*  |                | 4,295         | 114        | 100        | 2,820        | 341          | 574          | 164          | 182        |
| 不燃物<br>Incombustibles   |                | 1,350         | 56         | 54         | 650          | 161          | 260          | 85           | 84         |
| 乾燥動物<br>Dried Animals   |                | 222           | 5          | 3          | 140          | 17           | 43           | 9            | 5          |
| 液体<br>Liquids   |                | 334           | 3          | 11         | 156          | 29           | 110          | 13           | 12         |
| フィルター<br>Filters  |                | 4,170         | 133        | 274        | 1,755        | 620          | 936          | 246          | 206        |
| 非圧縮性不燃物<br>Incompressible Incombustibles  |                | 391           | 1          | 3          | 182          | 111          | 89           | 4            | 1          |
| <b>集荷事業所数<br/>Number of Establishments<br/>from which Radioactive Waste<br/>was Collected</b> |                | <b>1,580</b>  | <b>104</b> | <b>119</b> | <b>501</b>   | <b>269</b>   | <b>287</b>   | <b>153</b>   | <b>147</b> |

\* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

\* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

図8 種類別廃棄物集荷数量

Fig.8 Collected Radioactive Waste by Kinds of Waste in Fiscal 2007



## 4.1.3 廃棄物集荷数量および事業所数(種類別, 機関別)

Collected Radioactive Waste by Category of Organizations in Fiscal 2007

(200L容器換算本数 Number stated in terms of 200L containers)

| 種類<br>Waste   | 機関<br>Category | 総数<br>Total   | 医療機関**<br>Hospitals<br>&Clinics** | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|---|----------------|---------------|-----------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| <b>総数 Total</b>   |                | <b>11,739</b> | <b>4,929</b>                      | <b>2,112</b>                         | <b>3,588</b>                     | <b>1,030</b>                | <b>80</b>                        |
| <b>固体 Solids</b>  |                |               |                                   |                                      |                                  |                             |                                  |
| 可燃物<br>Combustibles Type 1  |                | 977           | 151                               | 256                                  | 434                              | 119                         | 17                               |
| 難燃物*<br>Combustibles Type 2*  |                | 4,295         | 2,177                             | 629                                  | 1,179                            | 288                         | 22                               |
| 不燃物<br>Incombustibles   |                | 1,350         | 623                               | 167                                  | 302                              | 237                         | 21                               |
| 乾燥動物<br>Dried Animals   |                | 222           | 4                                 | 43                                   | 125                              | 50                          | -                                |
| <b>液体 Liquids</b>   |                | <b>334</b>    | <b>3</b>                          | <b>96</b>                            | <b>202</b>                       | <b>32</b>                   | <b>1</b>                         |
| フィルター<br>Filters  |                | 4,170         | 1,864                             | 890                                  | 1,197                            | 209                         | 10                               |
| 非圧縮性不燃物<br>Incompressible<br>Incombustibles   |                | 391           | 107                               | 31                                   | 149                              | 95                          | 9                                |
| <b>集荷事業所数<br/>Number of<br/>Establishments from<br/>which Radioactive<br/>Waste was Collected</b> |                | <b>1,580</b>  | <b>972</b>                        | <b>258</b>                           | <b>261</b>                       | <b>77</b>                   | <b>12</b>                        |

\* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

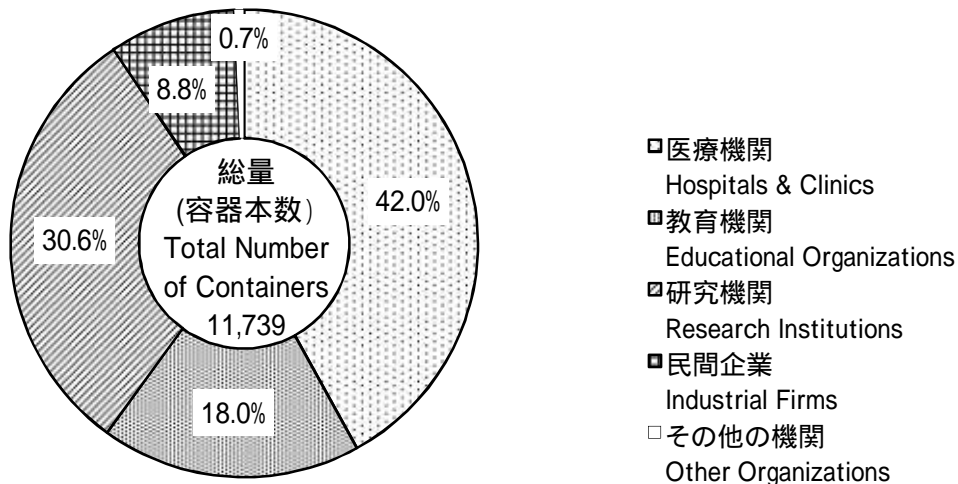
\* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

\*\* この統計においては、衛生検査所は医療機関に含む。

\*\* includes clinical laboratories

図9 種類別廃棄物集荷数量

Fig.9 Collected Radioactive Waste by Category of Organizations in Fiscal 2007



## 4.2 アイソトープ廃棄物の処理 Treatment of Radioactive Waste

### 4.2.1 廃棄物処理数量(種類別, 年度別)

Treatment of Radioactive Waste in Fiscal 1960-2007

(200L容器換算本数 Number stated in terms of 200L containers)

| 種類<br>Waste                                 | 年度<br>Year | 1960           | 1960         | 1960          | 1960          | 1960          | 1960          | 1960         | 1960         | 1960         | 1960         | 1960         | 1960         |
|---|------------|----------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|
|   |            | ~              | 1997         | 1998          | 1999          | 2000          | 2001          | 2002         | 2003         | 2004         | 2005         | 2006         | 2007         |
| <b>総数 Total</b>                             |            | <b>178,912</b> | <b>9,453</b> | <b>10,389</b> | <b>14,475</b> | <b>10,366</b> | <b>11,361</b> | <b>9,057</b> | <b>8,929</b> | <b>6,130</b> | <b>5,683</b> | <b>5,526</b> | <b>4,457</b> |
| <b>固体 Solids</b>                            |            |                |              |               |               |               |               |              |              |              |              |              |              |
| 可燃物<br>Combustibles Type 1                  |            | 24,052         | 1,205        | 581           | 672           | 251           | 492           | 173          | 280          | 168          | 247          | 121          | 215          |
| 難燃物*<br>Combustibles Type 2*                |            | 32,922         | 5,408        | 4,890         | 6,380         | 5,008         | 5,567         | 4,989        | 4,687        | 4,455        | 3,646        | 3,415        | 2,252        |
| 不燃物<br>Incombustibles                       |            | 73,484         | 1,606        | 3,255         | 2,297         | 1,954         | 1,413         | 1,235        | 482          | 23           | 8            | 72           | 15           |
| スラリー<br>Slurry                              |            | 168            | -            | -             | -             | -             | -             | -            | -            | -            | -            | -            | -            |
| 乾燥動物<br>Dried Animals                       |            | 1,067          | 25           | 75            | 25            | -             | -             | 100          | 25           | -            | -            | -            | -            |
| ホルマリン動物<br>Animals                          |            | 31             | -            | -             | -             | -             | -             | -            | -            | -            | -            | -            | -            |
| <b>液体 Liquids</b>                           |            |                |              |               |               |               |               |              |              |              |              |              |              |
| 無機<br>Inorganic Substances                  |            | 1,979          | 46           | -             | -             | 94            | 45            | 127          | -            | -            | -            | -            | -            |
| 有機<br>Organic Substances                    |            | 390            | -            | 18            | -             | -             | -             | -            | -            | -            | -            | -            | -            |
| フィルター<br>Filters                            |            | 39,435         | 1,163        | 1,570         | 5,079         | 2,116         | 3,844         | 2,403        | 3,455        | 1,484        | 1,782        | 1,918        | 1,975        |
| 非圧縮性不燃物<br>Incompressible<br>Incombustibles |            | 5,384          | -            | -             | 22            | 943           | -             | 30           | -            | -            | -            | -            | -            |

\* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

\* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

4.2.2 廃棄物処理数量(種類別, 機関別)

Treatment of Radioactive Waste by Category of Organizations in Fiscal 2007

(200L容器換算本数 Number stated in terms of 200L containers)

| 種類<br>Waste  | 機関<br>Category | 総数<br>Total  | 医療機関**<br>Hospitals<br>&Clinics** | 教育機関<br>Educational<br>Organizations | 研究機関<br>Research<br>Institutions | 民間企業<br>Industrial<br>Firms | その他の機関<br>Other<br>Organizations |
|--|----------------|--------------|-----------------------------------|--------------------------------------|----------------------------------|-----------------------------|----------------------------------|
| <b>総数 Total</b>                                      |                | <b>4,457</b> | <b>4,258</b>                      | <b>7</b>                             | <b>3</b>                         | <b>178</b>                  | <b>11</b>                        |
| <b>固体 Solids</b>                                     |                |              |                                   |                                      |                                  |                             |                                  |
| 可燃物<br>Combustibles Type 1                           |                | 215          | 157                               | -                                    | -                                | 57                          | 1                                |
| 難燃物*<br>Combustibles Type                            |                | 2,252        | 2,144                             | -                                    | -                                | 106                         | 2                                |
| 不燃物<br>Incombustibles                                |                | 15           | 0                                 | 6                                    | -                                | 1                           | 8                                |
| 乾燥動物<br>Dried Animals                                |                | -            | -                                 | -                                    | -                                | -                           | -                                |
| <b>液体 Liquids</b>                                    |                |              |                                   |                                      |                                  |                             |                                  |
| 無機<br>Inorganic Substances                           |                | -            | -                                 | -                                    | -                                | -                           | -                                |
| 有機<br>Organic Substances                             |                | -            | -                                 | -                                    | -                                | -                           | -                                |
| <b>フィルター<br/>Filters</b>                             |                | <b>1,975</b> | <b>1,957</b>                      | <b>1</b>                             | <b>3</b>                         | <b>14</b>                   | <b>-</b>                         |
| <b>非圧縮性不燃物<br/>Incompressible<br/>Incombustibles</b> |                | <b>-</b>     | <b>-</b>                          | <b>-</b>                             | <b>-</b>                         | <b>-</b>                    | <b>-</b>                         |

\* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

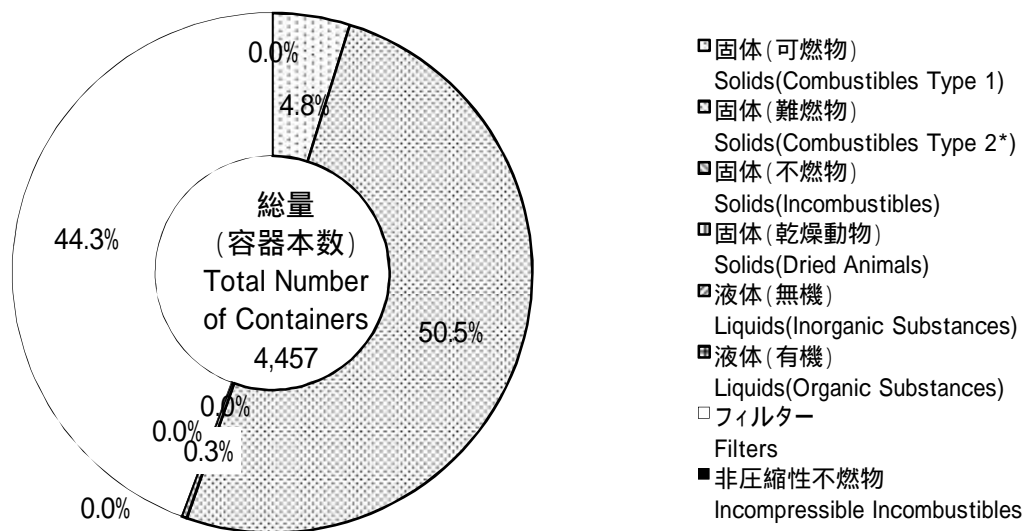
\* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

\*\* この統計においては、衛生検査所は医療機関に含む。

\*\* includes clinical laboratories

図10 種類別廃棄物処理数量

Fig.10 Treatment of Radioactive Waste by Kinds of Waste in Fiscal 2007



## 5 付録 APPENDIX

### 5.1 放射性医薬品の使用施設数の推移(都道府県別, 年度別) Number of Licensed Hospitals and Clinics for Radiopharmaceuticals by Prefecture

| 施設<br>H&C**         | 平成 17 年 (2005)      |                       |           |      | 平成 18 年 (2006)      |                       |           |      | 平成 19 年 (2007)      |                       |           |      |
|---------------------|---------------------|-----------------------|-----------|------|---------------------|-----------------------|-----------|------|---------------------|-----------------------|-----------|------|
|                     | 全施設<br>Total<br>H&C | In vitro<br>施設<br>H&C | In vivo   |      | 全施設<br>Total<br>H&C | In vitro<br>施設<br>H&C | In vivo   |      | 全施設<br>Total<br>H&C | In vitro<br>施設<br>H&C | In vivo   |      |
|                     |                     |                       | 施設<br>H&C | (%)* |                     |                       | 施設<br>H&C | (%)* |                     |                       | 施設<br>H&C | (%)* |
| 都道府県                |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 100 北海道             | 101                 | 5                     | 99        | 1.8  | 100                 | 4                     | 98        | 1.7  | 99                  | 4                     | 97        | 1.7  |
| 201 青森              | 20                  | 2                     | 20        | 1.4  | 20                  | 2                     | 20        | 1.4  | 19                  | 2                     | 19        | 1.3  |
| 202 岩手              | 20                  | 2                     | 20        | 1.4  | 19                  | 1                     | 19        | 1.4  | 18                  | 1                     | 18        | 1.3  |
| 203 宮城              | 27                  | 1                     | 26        | 1.1  | 27                  | 1                     | 26        | 1.1  | 28                  | 1                     | 27        | 1.1  |
| 204 秋田              | 16                  | 0                     | 16        | 1.4  | 16                  | 0                     | 16        | 1.4  | 16                  | 0                     | 16        | 1.4  |
| 205 山形              | 13                  | 1                     | 13        | 1.1  | 13                  | 1                     | 13        | 1.1  | 13                  | 1                     | 13        | 1.1  |
| 206 福島              | 18                  | 0                     | 18        | 0.9  | 18                  | 0                     | 18        | 0.9  | 18                  | 0                     | 18        | 0.9  |
| 東北計                 | 114                 | 6                     | 113       | 1.2  | 113                 | 5                     | 112       | 1.2  | 112                 | 5                     | 111       | 1.2  |
| TOHOKU Area Total   |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 401 新潟              | 33                  | 1                     | 33        | 1.3  | 33                  | 2                     | 33        | 1.4  | 34                  | 1                     | 34        | 1.4  |
| 405 山梨              | 7                   | 1                     | 7         | 0.8  | 8                   | 1                     | 8         | 0.9  | 6                   | 1                     | 6         | 0.7  |
| 406 長野              | 23                  | 1                     | 23        | 1.0  | 23                  | 1                     | 23        | 1.0  | 25                  | 1                     | 25        | 1.1  |
| 301 茨城              | 19                  | 1                     | 18        | 0.6  | 19                  | 1                     | 18        | 0.6  | 19                  | 1                     | 18        | 0.6  |
| 302 栃木              | 15                  | 2                     | 14        | 0.7  | 14                  | 2                     | 13        | 0.6  | 12                  | 2                     | 11        | 0.5  |
| 303 群馬              | 25                  | 2                     | 24        | 1.2  | 27                  | 2                     | 26        | 1.3  | 27                  | 2                     | 26        | 1.3  |
| 304 埼玉              | 33                  | 4                     | 31        | 0.4  | 34                  | 4                     | 32        | 0.5  | 34                  | 4                     | 32        | 0.5  |
| 305 千葉              | 38                  | 1                     | 38        | 0.6  | 41                  | 1                     | 41        | 0.7  | 41                  | 1                     | 41        | 0.7  |
| 306 東京都             | 106                 | 5                     | 104       | 0.8  | 110                 | 5                     | 108       | 0.9  | 108                 | 4                     | 106       | 0.8  |
| 307 神奈川県            | 61                  | 5                     | 58        | 0.7  | 60                  | 3                     | 58        | 0.7  | 62                  | 4                     | 59        | 0.7  |
| 関東計                 | 360                 | 23                    | 350       | 0.7  | 369                 | 22                    | 360       | 0.8  | 368                 | 21                    | 358       | 0.8  |
| KANTO Area Total    |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 407 岐阜              | 29                  | 2                     | 28        | 1.3  | 30                  | 2                     | 29        | 1.4  | 29                  | 2                     | 28        | 1.3  |
| 408 静岡県             | 35                  | 2                     | 35        | 0.9  | 35                  | 2                     | 35        | 0.9  | 35                  | 2                     | 35        | 0.9  |
| 409 愛知県             | 56                  | 4                     | 56        | 0.8  | 57                  | 3                     | 57        | 0.8  | 57                  | 3                     | 57        | 0.8  |
| 501 三重              | 17                  | 0                     | 17        | 0.9  | 17                  | 0                     | 17        | 0.9  | 17                  | 0                     | 17        | 0.9  |
| 東海計                 | 137                 | 8                     | 136       | 0.9  | 139                 | 7                     | 138       | 0.9  | 138                 | 7                     | 137       | 0.9  |
| TOKAI Area Total    |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 402 富山              | 17                  | 0                     | 17        | 1.5  | 17                  | 0                     | 17        | 1.5  | 17                  | 0                     | 17        | 1.5  |
| 403 石川              | 26                  | 2                     | 26        | 2.2  | 26                  | 2                     | 26        | 2.2  | 25                  | 1                     | 25        | 2.1  |
| 404 福井              | 11                  | 0                     | 11        | 1.3  | 11                  | 0                     | 11        | 1.3  | 11                  | 0                     | 11        | 1.3  |
| 北陸計                 | 54                  | 2                     | 54        | 1.7  | 54                  | 2                     | 54        | 1.7  | 53                  | 1                     | 53        | 1.7  |
| HOKURIKU Area Total |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 502 滋賀              | 17                  | 2                     | 16        | 1.2  | 18                  | 1                     | 17        | 1.2  | 17                  | 1                     | 16        | 1.2  |
| 503 京都              | 38                  | 6                     | 35        | 1.3  | 39                  | 5                     | 36        | 1.4  | 38                  | 4                     | 35        | 1.3  |
| 504 大阪              | 74                  | 6                     | 71        | 0.8  | 79                  | 3                     | 77        | 0.9  | 81                  | 3                     | 79        | 0.9  |
| 505 兵庫              | 55                  | 1                     | 55        | 1.0  | 58                  | 1                     | 58        | 1.0  | 59                  | 1                     | 59        | 1.1  |
| 506 奈良              | 13                  | 0                     | 13        | 0.9  | 13                  | 0                     | 13        | 0.9  | 13                  | 0                     | 13        | 0.9  |
| 507 和歌山             | 13                  | 0                     | 13        | 1.2  | 13                  | 0                     | 13        | 1.3  | 13                  | 0                     | 13        | 1.3  |
| 近畿計                 | 210                 | 15                    | 203       | 1.0  | 220                 | 10                    | 214       | 1.0  | 221                 | 9                     | 215       | 1.0  |
| KINKI Area Total    |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 601 鳥取              | 8                   | 0                     | 8         | 1.3  | 8                   | 0                     | 8         | 1.3  | 8                   | 0                     | 8         | 1.3  |
| 602 島根              | 11                  | 0                     | 11        | 1.5  | 11                  | 0                     | 11        | 1.5  | 11                  | 0                     | 11        | 1.5  |
| 603 岡山              | 19                  | 0                     | 19        | 1.0  | 20                  | 0                     | 20        | 1.0  | 21                  | 0                     | 21        | 1.1  |
| 604 広島              | 29                  | 1                     | 28        | 1.0  | 29                  | 1                     | 28        | 1.0  | 30                  | 1                     | 29        | 1.0  |
| 605 山口              | 20                  | 0                     | 20        | 1.3  | 20                  | 0                     | 20        | 1.3  | 21                  | 0                     | 21        | 1.4  |
| 中国計                 | 87                  | 1                     | 86        | 1.1  | 88                  | 1                     | 87        | 1.1  | 91                  | 1                     | 90        | 1.2  |
| THUGOKU Area Total  |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 607 香川              | 14                  | 1                     | 14        | 1.4  | 14                  | 1                     | 14        | 1.4  | 14                  | 0                     | 14        | 1.4  |
| 606 徳島              | 7                   | 1                     | 7         | 0.9  | 7                   | 1                     | 7         | 0.9  | 7                   | 1                     | 7         | 0.9  |
| 608 愛媛              | 24                  | 1                     | 24        | 1.6  | 25                  | 1                     | 25        | 1.7  | 25                  | 0                     | 25        | 1.7  |
| 609 高知              | 7                   | 1                     | 7         | 0.9  | 7                   | 0                     | 7         | 0.9  | 7                   | 0                     | 7         | 0.9  |
| 四国計                 | 52                  | 4                     | 52        | 1.3  | 53                  | 3                     | 53        | 1.3  | 53                  | 1                     | 53        | 1.3  |
| SHIKOKU Area Total  |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 701 福岡              | 60                  | 5                     | 57        | 1.1  | 59                  | 3                     | 57        | 1.1  | 56                  | 2                     | 55        | 1.1  |
| 702 佐賀              | 6                   | 1                     | 6         | 0.7  | 6                   | 1                     | 6         | 0.7  | 6                   | 1                     | 6         | 0.7  |
| 703 長崎              | 14                  | 2                     | 14        | 0.9  | 14                  | 1                     | 14        | 0.9  | 13                  | 0                     | 13        | 0.9  |
| 704 熊本              | 20                  | 1                     | 20        | 1.1  | 19                  | 1                     | 19        | 1.0  | 20                  | 1                     | 20        | 1.1  |
| 705 大分              | 13                  | 0                     | 13        | 1.1  | 13                  | 0                     | 13        | 1.1  | 14                  | 0                     | 14        | 1.2  |
| 706 宮崎              | 15                  | 0                     | 15        | 1.3  | 14                  | 0                     | 14        | 1.2  | 14                  | 0                     | 14        | 1.2  |
| 707 鹿児島             | 27                  | 1                     | 27        | 1.5  | 28                  | 1                     | 28        | 1.6  | 27                  | 0                     | 27        | 1.5  |
| 708 沖縄              | 10                  | 0                     | 10        | 0.7  | 12                  | 0                     | 12        | 0.9  | 12                  | 0                     | 12        | 0.9  |
| 九州計                 | 165                 | 10                    | 162       | 1.1  | 165                 | 7                     | 163       | 1.1  | 162                 | 4                     | 161       | 1.1  |
| KYUSYU Area Total   |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |
| 計                   | 1,280               | 74                    | 1,255     | 1.0  | 1,301               | 61                    | 1,279     | 1.0  | 1,297               | 53                    | 1,275     | 1.0  |
| Grand Total         |                     |                       |           |      |                     |                       |           |      |                     |                       |           |      |

\* 対人口10万人比 H&amp;C/100thousand

注 本表の数字は供給実績に基づく施設数。

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

\*\* H&amp;C : Hospitals and Clinics



5.2 放射性医薬品の使用施設数の推移(事業形態別, 年度別)  
Number of Licensed Hospitals and Clinics for Radiopharmaceuticals by Usage

| 事業形態<br>Type                         | 施設<br>H&C* | 全 施 設 Total H&C* |               |               | in vivo施設 in vivo H&C* |               |               | in vitro施設 in vitro H&C* |               |               |
|--------------------------------------|------------|------------------|---------------|---------------|------------------------|---------------|---------------|--------------------------|---------------|---------------|
|                                      |            | 平成17年<br>2005    | 平成18年<br>2006 | 平成19年<br>2007 | 平成17年<br>2005          | 平成18年<br>2006 | 平成19年<br>2007 | 平成17年<br>2005            | 平成18年<br>2006 | 平成19年<br>2007 |
| 大学病院<br>University Hospitals         |            | 121              | 122           | 123           | 121                    | 122           | 123           | 26                       | 19            | 14            |
| 国立病院<br>National Hospitals           |            | 142              | 141           | 138           | 142                    | 141           | 138           | 4                        | 4             | 4             |
| 公立病院<br>Local Governmental Hospitals |            | 359              | 360           | 356           | 359                    | 360           | 356           | 13                       | 9             | 8             |
| 民間病院<br>Private Hospitals            |            | 633              | 656           | 658           | 633                    | 656           | 658           | 6                        | 7             | 5             |
| 衛生検査所<br>Clinical Laboratories       |            | 25               | 22            | 22            | 0                      | 0             | 0             | 25                       | 22            | 22            |
| 合 計<br>Total                         |            | 1,280            | 1,301         | 1,297         | 1,255                  | 1,279         | 1,275         | 74                       | 61            | 53            |

注 本表の数字は供給実績に基づく施設数。

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

\* H&C : Hospitals and Clinics

5.3 放射性医薬品の使用施設数の推移(in vivo・in vitro別, 年度別)  
Number of Licensed Hospitals and Clinics for Radiopharmaceuticals by in vivo and in vitro

| 施設 H&C*  | 年度 Year | 平成15年<br>2003 | 平成16年<br>2004 | 平成17年<br>2005 | 平成18年<br>2006 | 平成19年<br>2007 |
|--|---------|---------------|---------------|---------------|---------------|---------------|
| in vivo 施設<br>in vivo Total                        |         | 1,237         | 1,239         | 1,255         | 1,279         | 1,275         |
| in vitro 施設<br>in vitro Total                      |         | 110           | 90            | 74            | 61            | 53            |
| in vivo/in vitro両方使用<br>Both Use                   |         | 79            | 63            | 49            | 39            | 31            |
| in vivoのみ使用<br>Only in vivo                        |         | 1,158         | 1,176         | 1,206         | 1,240         | 1,244         |
| in vitroのみ使用(病院)<br>Hospital Only in vitro         |         | 0             | 0             | 0             | 0             | 0             |
| in vitroのみ使用(衛生検査所)<br>Clinical Lab. Only in vitro |         | 31            | 27            | 25            | 22            | 22            |
| 全施設数<br>Total of Hospitals and Clinics             |         | 1,268         | 1,266         | 1,280         | 1,301         | 1,297         |

注 本表の数字は供給実績に基づく施設数。

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

\* H&C : Hospitals and Clinics

## 5.4 in vivo 供給量の推移(核種別, 年度別)

Amounts of Radiopharmaceuticals for in vivo Test Distributed in Fiscal 2003-2007

(MBq)

| 核種<br>Nuclides                         | 年度<br>Year | 平成15年<br>2003 | 平成16年<br>2004 | 平成17年<br>2005 | 平成18年<br>2006 | 平成19年<br>2007 |
|--|------------|---------------|---------------|---------------|---------------|---------------|
| <sup>18</sup> F                        |            | -             | -             | 2,300,845     | 10,671,540    | 17,663,430    |
| <sup>51</sup> Cr                       |            | 5,273         | 5,384         | 4,496         | 3,053         | 1,906         |
| <sup>67</sup> Ga                       |            | 15,641,121    | 14,117,202    | 12,555,691    | 10,341,019    | 8,534,013     |
| <sup>81</sup> Rb- <sup>81m</sup> Kr(G) |            | 822,695       | 722,425       | 688,940       | 660,450       | 627,705       |
| <sup>89</sup> Sr                       |            | -             | -             | -             | -             | 13,113        |
| <sup>99</sup> Mo- <sup>99m</sup> Tc(G) |            | 177,683,120   | 172,893,605   | 166,473,900   | 159,657,760   | 151,370,135   |
| <sup>99m</sup> Tc                      |            | 334,495,137   | 324,617,167   | 326,681,573   | 316,394,263   | 308,878,218   |
| <sup>111</sup> In                      |            | 212,972       | 214,563       | 222,999       | 227,513       | 189,218       |
| <sup>123</sup> I                       |            | 23,778,129    | 23,061,509    | 23,328,397    | 22,574,774    | 22,932,471    |
| <sup>131</sup> I                       |            | 8,644,971     | 9,077,783     | 9,854,801     | 10,745,796    | 11,721,540    |
| <sup>133</sup> Xe                      |            | 7,538,935     | 6,457,240     | 4,570,240     | 3,482,070     | 2,762,790     |
| <sup>201</sup> Tl                      |            | 25,974,111    | 25,031,906    | 24,563,893    | 22,729,174    | 21,688,845    |
| <b>合 計</b><br><b>Total</b>             |            | 594,796,463   | 576,198,783   | 571,245,774   | 557,487,411   | 546,383,383   |

(G) : ジェネレーター

(G) : Radioisotope Generator

## 5.5 in vitro 供給量の推移(核種別, 年度別)

Amounts of Radiopharmaceuticals for in vitro Test Distributed in Fiscal 2003-2007

(MBq)

| 核種<br>Nuclides             | 年度<br>Year | 平成15年<br>2003 | 平成16年<br>2004 | 平成17年<br>2005 | 平成18年<br>2006 | 平成19年<br>2007 |
|----------------------------|------------|---------------|---------------|---------------|---------------|---------------|
| <sup>59</sup> Fe           |            | 2,848         | 2,931         | 2,771         | 2,946         | 3,109         |
| <sup>125</sup> I           |            | 106,849       | 84,991        | 56,227        | 39,326        | 36,840        |
| <b>合 計</b><br><b>Total</b> |            | 109,696       | 87,922        | 58,998        | 42,272        | 39,949        |

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