



ASIA-PACIFIC SAFEGUARDS NETWORK SURVEYS: REPORT OF FINDINGS

1. Survey Overview

During the latter half of 2015, the Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN) of the Japan Atomic Energy Agency (JAEA), Japan,¹ conducted, on behalf of the APSN, surveys on training needs and providers in the Asia-Pacific region. The aim of the surveys is to assist the APSN to coordinate training activities and programs according to organizations' and countries' capabilities, resources and needs. The surveys also aim to facilitate a needs analysis and identify gaps in the provision of training.

The APSN conducted its first survey of training needs and providers in the Asia-Pacific region in October 2011.² The 5th APSN Plenary met in Myanmar in September 2014 and decided to conduct new surveys in 2015 in order to acquire updated and more detailed information on training needs and providers.

This report, compiled by the ISCN, provides a summary of the findings from the 2015 surveys. It focuses on how training providers and needs have evolved since 2011 and takes a more detailed look at the training of facility operators and officers in charge of nuclear material accounting and control. The results build on and update the baseline of available training capabilities established by the 2011 survey. This report aims to enable the APSN to optimize the use of existing capabilities to meet needs and identify where capabilities could be further developed.

2. Survey Method

Two surveys were conducted in 2015. The *Training Needs Survey* aims to improve understanding of requirements for and interest in safeguards-related training in each of the countries in the Asia-Pacific region, including urgent or priority areas. The *Training Providers Survey* aims to ascertain the training capabilities and resources of countries in the Asia-Pacific region.

¹ Japan has held the APSN Chair since the 5th APSN Plenary in Myanmar (September 2014). The ISCN/JAEA supports the Chairmanship.

² The Report of Findings from the 2011 survey is available on the APSN website <<http://www.apsn-safeguards.org/resources/apsn-network-survey-report-findings>>.

The surveys were sent to the 20 APSN member states and observers: Australia, Bangladesh, Canada, Indonesia, Japan, the ROK, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, the United States, Vietnam, Mongolia, Cambodia, Laos, Brunei, the IAEA, and the EC.

Eleven organizations responsible for safeguards implementation or training in 11 different countries completed a total of 17 surveys. Seven organizations completed the Training Providers Survey and ten organizations completed the Training Needs Survey. These figures include six organizations that completed both surveys, indicating both an interest in receiving training in certain areas and a capability to provide training in others. Responses were provided by organizations responsible for safeguards implementation (national regulators) or entities responsible for safeguards training. With a few potential exceptions (discussed below), each organization can be thought of as representing the country in which it operates for the purposes of safeguards training. Consequently, this report will refer to “countries” as the unit of analysis (eg, “five countries expressed an interest in receiving training in...”)

3. Survey Design and Development

The surveys allow each country to indicate specific training needs and capabilities by selecting from a list of 30 topic areas. Countries were also asked to indicate their methods for providing training and their preferred methods of receiving training. Training recipients (countries completing the Training Needs Survey) were also asked to provide a ranked list of their top five priority topic areas for receiving training. Sample survey forms are provided in Appendices 3 and 4 below.

The survey forms have a similar format to the 2011 survey. In consultation with the compilers of the 2011 survey, the ISCN modified some of the questions. The 2011 survey categorized topic areas thematically (either “legal and regulatory framework”, “SSAC technical capacity building”, or “additional protocol (AP) implementation”), while the 2015 surveys arrange topics by target recipient. This change will allow, for the first time, the training needs of state regulatory authorities (SRAs) and facility operators/officers to be disaggregated. In most countries, facility operators/officers are responsible for the bulk of day-to-day safeguards record-keeping and reporting, as well as material control and support of IAEA verification activities. Worldwide, the majority of safeguards and SSAC training has been directed to SRAs, rather than facility operators. According to IAEA Secretariat figures, between 2008 and 2014, only 10-11% of SSAC training courses in IAEA member states were targeted to operators.³ It is

³ This is based on the number of facility-level NMAC courses out of all SSAC courses documented in Jaime Vidaurre-Henry, Noriko Miyaji, and Mizuki Hirai, “Focusing NMA&C Training on the Precise

therefore important to establish whether or not the specific training requirements of facility operators are being met. This change to the structure of the surveys is intended to better represent the scope of the roles of operators/officers in charge of safeguards. Training for SRAs on additional protocol implementation remains a separate category.

The topic “quality assurance and quality control” has been replaced with “quality management system” (QMS) in order to encompass all coordinated activities used to direct an organization with regard to quality, including establishment of the quality policy and quality objectives, quality planning, quality assurance, quality control, and quality improvement. The addition of the topic “negotiating with the IAEA” for SRAs is intended to capture a need that may arise as some countries in the region progress toward implementing arrangements with the IAEA for integrated safeguards or fulfill their long-term goals of constructing facilities with new facility attachments. The topics “integrated management system (IMS)” and “information management” were added to reflect recent changes in concepts of organizational management and business administration.

The Training Needs Survey also features a new question inviting recipients to list one critical need, the fulfilment of which would be most helpful to the organization or its staff in the next 1-2 years.

4. Summary of Findings

The results of the surveys are summarized in Appendices 1 and 2. Each recipient country has been assigned a letter (A through J) to protect the confidentiality of information provided. Similarly, each provider country has been assigned a number (1 through 7).

5. Analysis of the Surveyed Countries’ Training Needs

Ten countries completed the Training Needs Survey indicating an interest in receiving training on specific safeguards-related topics (see Appendix 1 for a summary table of responses). Almost all of the topic areas were of interest to at least four out of ten countries surveyed. These results confirm the importance of including each topic area in safeguards training courses. The only topic areas that received interest from fewer than four countries, and that could therefore be given less emphasis in safeguards training, were NPT/safeguards system, enforcement, QMS for operators, and radiation protection

Group of Practitioners” (Paper to be presented at Advances in Nuclear Nonproliferation Technology and Policy Conference (ANTPC), American Nuclear Society, Santa Fe, September 25-30, 2016); Jaime Vidaurre-Henry, “Training for Operators or for National Authorities?” (Position paper for 8th INMM/ESARDA Joint Workshop: Building International Capacity, Jackson Hole, October 4-7, 2015).

and health physics. However, in the opinion of the surveyors, the structure and purpose of the NPT/safeguards system form an important part of the introduction to any training course.

The Training Needs Survey also indicates a number of areas that could be given greater emphasis in training courses. Nine out of ten countries surveyed expressed interest in receiving training in non-destructive assay (NDA) for SRAs but only one country identified NDA as a top five priority training need (see Table 1). This contrasts with the 2011 survey, in which four countries identified NDA as a top five priority. It appears that interest in (and utilization of) NDA has been in relative decline among nuclear newcomers in the region over the last few years.

Seven out of ten countries surveyed expressed interest in receiving training in AP Annex II identification, AP declarations (and updates) preparation and submission, design information (including how to fill out design information questionnaires (DIQs)), safeguards by design (SBD), information management, QMS for SRAs, and international reporting requirements. Of these seven topics, only one (design information) falls under the category of capacity building for facility operators/officers.

Based on the survey of top five priority training needs, AP Annex II identification training, AP declaration preparation, design information, and SBD stand out as the four priority needs that are most widely shared by member states. These four topics span the three topic categories surveyed. The first two topics reflect recent and prospective ratifications of the additional protocol by some countries in the region. The topics “design information” and “SBD” primarily reflect the interest among some countries in constructing new nuclear facilities.

The number of personnel supporting the implementation of safeguards varies considerably among surveyed countries (see Table 2). One country has over 100 staff members supporting implementation of safeguards. However, most of the potential training recipients have fewer than 20 staff members (full-time equivalent). Half of the countries surveyed had fewer than five staff members. Similarly, most of the (potential) training providers only have a small number of staff members. Regardless of whether it is acting as a training provider or a training recipient, a small office may only be able to send one or two staff members at a time to attend training. This is essential if these organizations are to avoid being short-staffed at home. Training providers should coordinate the scheduling of training opportunities to minimize scheduling clashes. This would help to ensure that each state has an opportunity to send at least one staff member to participate in each training course that could be useful to it.

Table 1: Top five priority training needs by country as listed by countries completing the Training Needs Survey. Colored boxes indicate that three or more countries listed the topic as a top five priority; gray boxes indicate that no response was given. Where a country combined two topics in a single response entry, both topics are shown as a split cell in the table.

| | Country A | Country B | Country C | Country D | Country E | Country F | Country G | Country H | Country I | Country J |
|------------|----------------------------------|---|-----------|----------------------------------|---|--------------------------------------|-------------------------------------|---|--------------------------------|---|
| 1st | Nuclear security and PP: DBT | Safeguards by design | | IMS | National nuclear law/regulations | International reporting requirements | AP Annex II identification training | PP: DBT | Domestic safeguards inspection | Safeguards by design |
| 2nd | National nuclear law/regulations | Design information for NPP | | Negotiating with IAEA | NMAC | NDA | QMS and IMS | AP declaration preparation and submission | Development of procedures | Nuclear security and PP: DBT |
| 3rd | | Negotiating with IAEA - subsidiary arrangements | | Information management | Design information | AP Annex II identification training | Development of procedures | AP Annex II identification training | Quality management | AP declaration preparation and submission |
| 4th | | Licensing (export/import) | | NMAC | Domestic reporting requirements | Outreach to AP-affected entities | Regulation on safeguards | Complementary access | IMS | Containment/Surveillance |
| 5th | | IMS | | Outreach to AP-affected entities | AP declaration preparation and submission | PIT and PIV | Containment/Surveillance | | NMAC and design information | Information management (CSA and AP) |

Table 2: The number of staff members that support the implementation of safeguards as recorded by each country that completed the Training Needs Survey.

| Country | Number of staff members supporting safeguards implementation (full-time) | Number of staff members supporting safeguards implementation (part-time) |
|--------------|--|--|
| A | Less than 5 | 0 |
| B | 5 to 15 | More than 15 |
| C | More than 15 | 5 to 15 |
| D | More than 15 | 0 |
| E | Less than 5 | 0 |
| F | 5 to 15 | 0 |
| G | Less than 5 | 0 |
| H | 5 to 15 | 0 |
| I | Less than 5 | Less than 5 |
| J | Less than 5 | 0 |
| Total | 200 | 32 |

6. Analysis of the Surveyed Countries Training Offerings/Capabilities

Of the seven countries that completed the Training Providers Survey, six indicated capabilities to address specific safeguards-related topics in their training activities (see Appendix 2 for a summary table of responses).

The responses to the Training Providers Survey indicate that there is sufficient interest and expertise in the region to address training needs in most areas. However, some of these responses came from potential providers that are not currently prepared to offer training courses. Every topic area is covered by at least two providers or potential providers. Most topic areas were covered by four or more (potential) providers. Of topic areas that were covered by fewer than four (potential) providers (see Table 3), IMS was the most widely held to be a priority area with three countries placing it in their top five priority training needs (see Table 1).

Caution is required in comparing the number of potential provider countries with the number of countries interested in receiving training. Some countries have a degree of capability (including technical expertise) to provide targeted training in multiple topic areas but would not be able to offer training in all of these areas simultaneously due to limitations on budgets or numbers of staff. This is particularly important in interpreting the results for capacity building for facility operators and facility officers – the training expertise may exist but only a small proportion of actual course offerings are directed to facility operators.⁴

⁴ On the proportion of training courses directed to operators, see Jaime Vidaurre-Henry, Noriko Miyaji, and Mizuki Hirai, “Focusing NMA&C Training on the Precise Group of Practitioners” (Paper to be presented at Advances in Nuclear Nonproliferation Technology and Policy Conference (ANTPC),

Given the level of redundancy in capabilities in most subject areas, it will be important to coordinate training efforts, manage scheduling clashes, and avoid duplication.

Four of the countries that completed the Training Providers Survey are emerging nuclear countries in the sense that they have not yet operated a nuclear power plant. They indicated abilities and interests in providing training on specific topics and their experiences in developing nuclear energy are likely to be useful for training other countries in the region with similar nuclear infrastructures.

Table 3: Topic areas with only two or three potential training providers based on responses to the Training Providers Survey. Where countries identified a topic area as a top five priority area in the Training Needs Survey, the topic is color-coded in the same way as in Table 1.

| Training Offering | Providers |
|---|---------------------------------|
| QMS | Country 2, Country 5, Country 7 |
| IMS | Country 2, Country 5, Country 7 |
| Licensing (export/import) | Country 2, Country 4, Country 5 |
| Negotiating with IAEA | Country 2, Country 4, Country 5 |
| Radiation protection and health physics | Country 5, Country 7 |
| Self-assessments | Country 2, Country 4, Country 7 |

American Nuclear Society, Santa Fe, September 25-30, 2016); Jaime Vidaurre-Henry, “Training for Operators or for National Authorities?” (Position paper for 8th INMM/ESARDA Joint Workshop: Building International Capacity, Jackson Hole, October 4-7, 2015).

Table 4: Topic areas with the largest number of potential training providers (six) based on responses to the Training Providers Survey. Where countries identified a topic area as a top five priority area in the Training Needs Survey, the topic is color-coded in the same way as in Table 1.

| Training Offering | Providers |
|---|----------------------|
| Design information | All except Country 6 |
| NPT/safeguards system | All except Country 6 |
| National nuclear law/regulations (for SRAs) | All except Country 6 |
| International reporting requirements | All except Country 6 |
| Development of procedures | All except Country 6 |
| NMAC (for SRAs) | All except Country 6 |
| Domestic inspections regulatory framework | All except Country 6 |
| Information Management | All except Country 6 |
| National nuclear law/regulations (for operators) | All except Country 6 |
| NMAC: records (for operators) | All except Country 6 |
| Physical Inventory Taking (PIT) and Verification (PIV) | All except Country 6 |
| Domestic reporting requirements | All except Country 6 |
| Preparing for and supporting IAEA activities | All except Country 6 |
| AP reporting/updating requirements | All except Country 6 |
| AP declaration (and updates) preparation and submission | All except Country 6 |
| Complementary Access | All except Country 6 |

7. Preferred Methods of Receiving and Providing Training

Of the ten countries that completed the Training Needs Survey, seven or more indicated regional workshop, hands-on training, short-term technical fellowship, or e-learning as a preferred method of receiving training (see Table 5). Of the seven countries that completed the Training Providers Survey, at least four indicated bilateral consultation, regional workshop, hands-on training, or course curricula as a method of or resource for providing training (see Table 5).

Compared with the 2011 survey, the results of the 2015 surveys suggest that the methods of providing training now more effectively reflect the preferences of prospective recipients. Resources and methods used to provide training appear to have evolved to meet the needs outlined in the December 2011 survey report. This is due in large part to the rise of e-learning as an option among providers. Due to its flexibility, ease of access/scheduling, and scalability to accommodate any number of participants, e-learning may provide new opportunities to conduct training in a cost-effective and

convenient manner. The options for developing e-learning could be discussed among the training providers (Country 4, Country 5, and Country 7), perhaps with a view to using the APSN website or Information Sharing Framework website to offer e-learning modules.

One area where the number of providers remains limited relative to demand is in the provision of hands-on training.

There was little convergence among countries on the subject of top five priority training needs (see Table 1). This suggests that tailored methods of providing training, including bilateral consultations, hands-on training, and short-term technical visits will continue to be important means of providing training.

Table 5: Responses from Countries A through J on preferred methods of receiving training and from Countries 1 to 7 on methods of providing training.

| Preferred methods of receiving or providing training | Responses of (potential) recipients | | | | | | | | | | Responses of (potential) providers | | | | | | | |
|--|-------------------------------------|---|---|---|---|---|---|---|---|---|------------------------------------|---|----------------|----------------|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J | 1 ⁵ | 2 | 3 ⁶ | 4 ⁷ | 5 | 6 | 7 | |
| Bilateral consultation | | X | | | X | | X | X | X | X | X | X | X | | X | X | | X |
| Regional workshop | | X | | X | X | X | X | X | X | X | | X | | X | X | | | X |
| Hands-on training | X | X | | X | X | X | X | | X | X | | X | | X | X | | | X |
| Short-term technical visit | | X | | | X | X | X | X | X | X | | X | | | X | | | X |
| Long-term fellowship | | | | | | X | | | | X | X | | | | X | | | |
| E-learning | X | | | X | X | | X | X | X | X | | | | X | X | | | X |
| Course curricula and tailored training modules | | X | | | X | | X | X | X | X | | X | | X | X | | | X |

⁵ Country 1 indicated under “other” that it also provides support to other training providers when requested.

⁶ Country 3 indicated under “other” that it also provides or is interested in providing training materials development.

⁷ Country 4 indicated under “other” that it also provides or is interested in providing group exercises and IT-based simulation training.

8. Additional Comments from Members

Eight countries responded to the question about critical needs in the next 1-2 years on the Training Needs Survey. Most of these countries called for more hands-on training at facilities of a similar type to those located in their territory. Based on these responses, providers could usefully increase hands-on training opportunities for foreign participants at LOFs and research reactors.

One country used this survey question to highlight the urgent need for training for domestic inspections, while another country pointed to development of laws/regulations and equipment as high priority areas.

9. Conclusion and Ideas for Further Consideration by APSN

State regulatory authorities and facility operators require considerable human and technological capacity in order to effectively implement their safeguards obligations. The results of the 2015 Training Needs Survey and Training Providers Survey show that the region has the potential to meet its training needs but there are opportunities for APSN to more effectively utilize available resources to address those needs. Most importantly, providers should use their capabilities to design training opportunities around recipients' needs and make training opportunities known to recipients well in advance.

The results of the survey confirm the existence of a need for training in nearly all safeguards-related topic areas. The topic areas where demand is highest relative to supply are AP Annex II identification training, NDA, SBD, IMS, and QMS. All five of these areas relate primarily to capacity building for SRAs. Of topics categorized as capacity building for operators, "design information" appeared to be of greatest interest among potential recipients.

Overall, potential training recipients expressed slightly more interest in receiving training for SRAs than for operators. However, a majority of potential recipients expressed an interest in receiving training in some of the essential safeguards activities for operators, including NMAC, domestic reporting requirements, and PIT and PIV. Most of the (potential) providers indicated interest and capability in the provision of training to operators. This suggests that both the need and the capability exist to increase training opportunities for officers in charge of safeguards at nuclear facilities.

More frequent (annual) surveys would help the APSN to form an up-to-date central repository for information on all safeguards training activities and resources in the Asia-Pacific region. The APSN could then act as a resource pool (including for joint

lecturers with different expertise).

The APSN has a role in harmonizing and coordinating training events (avoiding scheduling date clashes and ensuring that advanced or follow-on courses are scheduled consecutively with beginner-level courses). The APSN should also have a role in “advertising” (enhancing the visibility) of training events to target countries. The APSN, perhaps in cooperation with the Forum for Nuclear Cooperation in Asia, could work toward developing a calendar of training courses and events or a catalogue with course summaries for the (members only part of the) APSN website. This would help potential recipients to make the best possible use of existing courses and potential capabilities

The results suggest a few potentially useful modifications to the Training Providers Survey:

- In discussing capabilities in certain topic areas, it would be worthwhile distinguishing topic areas where the organization already has scheduled activities or has training modules that could be deployed in the near future from topic areas where the organization has some capability to conduct activities but no immediate plans to do so.
- The survey should encourage providers of training to include capabilities to provide training based on their experience training their own employees. At present, some providers may only be listing training provided to other institutions or other countries.
- Where multiple organizations in a single country each have responsibility for providing training, the APSN should encourage each organization to complete a survey to ensure a fuller understanding of the entire country’s training capabilities and needs.

The results also suggest that modifications to the Training Needs Survey could provide opportunities to better understand needs:

- The survey could consider areas where operators might usefully receive training that has traditionally been directed primarily to SRAs. In particular, it would be worthwhile gauging potential recipients’ interest in receiving training in NMAC and NDA for operators of item or bulk-handling facilities.
- In some cases, individual new staff at an organization may require training in a wide variety of subject areas, while the organization as a whole does not require such training. For each topic area listed in Section 4, the Training Needs Survey could include one box for “new staff” and one box for “existing staff”.
- Where multiple organizations (including operators, regulators and training bodies) in a country could benefit from receiving training, each organization should be encouraged to complete the Training Needs Survey, or a single organization should be encouraged to complete the survey on behalf of all potential training

recipients in the country.

Appendix 1. Summary of Training Needs by Training Recipient or Potential Training Recipient

| Category and Topic Area | Country | | | | | | | | | |
|--|---------|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | H | I | J |
| Capacity Building for SRAs | | | | | | | | | | |
| NPT/safeguards system | X | X | | | X | | | | | |
| National nuclear law/regulations | X | | | X | X | | X | | | |
| International reporting requirements | X | X | | X | X | X | | | X | X |
| Development of procedures | X | | | X | X | | X | X | X | |
| NMAC | X | X | | X | | | | | X | |
| QMS | X | | | X | X | X | X | | X | X |
| IMS | | X | | X | | | X | X | X | |
| Licensing (export/import) | | X | | X | | | X | | X | X |
| Domestic inspections regulatory framework | X | | | | X | | X | | X | |
| Enforcement | | X | | | | | X | | | X |
| Negotiating with IAEA | | X | | X | | | X | | X | |
| Information Management | | X | | X | X | X | X | | X | X |
| NDA | X | X | X | X | | X | X | X | X | X |
| Containment/Surveillance | | X | | X | | | X | | X | X |
| SBD | X | X | | X | X | | X | | X | X |
| Domestic safeguards inspections | X | | | | X | X | X | | X | X |
| Capacity Building for Facility Operators/Officers | | | | | | | | | | |
| National nuclear law/regulations | X | X | | | X | | X | | X | |
| NMAC: records | | X | | X | X | | X | | X | X |
| Design information | | X | | X | X | X | X | | X | X |
| PIT and PIV | | X | | X | | X | X | | X | X |
| Domestic reporting requirements | | X | | X | X | X | X | | X | |
| Preparing for and supporting IAEA | | X | | X | | | X | | X | X |
| Nuclear security and PP: DBT | X | | | | X | | X | X | X | X |
| Radiation protection and health physics | | | | | | | | | | |
| QMS | | | | X | | | X | | X | |
| Additional Protocol Implementation by SRAs | | | | | | | | | | |
| Reporting/updating requirements | | X | | X | X | | X | X | | X |
| Declaration (and updates) preparation and submission | | X | | X | X | X | X | X | | X |
| Outreach to AP-affected entities | | | | X | | X | X | X | X | X |
| Complementary Access | | X | | X | | | X | X | | |
| AP Annex II identification training | | X | | | X | X | X | X | X | X |
| Other | | | | | | | | | | |

Appendix 2. Summary of Offerings and Capabilities by Training Provider or Potential Training Provider

| Category and Topic Area | Country | | | | | | |
|--|---------|---|---|---|---|---|----------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Capacity Building for SRAs | | | | | | | |
| NPT/safeguards system | X | X | X | X | X | | X |
| National nuclear law/regulations | X | X | X | X | X | | X |
| International reporting requirements | X | X | X | X | X | | X |
| Development of procedures | X | X | X | X | X | | X |
| NMAC | X | X | X | X | X | | X |
| QMS | | X | | | X | | X |
| IMS | | X | | | X | | X |
| Licensing (export/import) | | X | | X | X | | |
| Domestic inspections regulatory framework | X | X | X | X | X | | X |
| Enforcement | X | X | | X | X | | X |
| Negotiating with IAEA | | X | | X | X | | |
| Information Management | X | X | X | X | X | | X |
| NDA | | X | X | X | | | X |
| Containment/Surveillance | | X | X | X | | | X |
| SBD | | X | X | X | | | X |
| Domestic safeguards inspections | X | | X | X | X | | X |
| Capacity Building for Facility Operators/Officers | | | | | | | |
| National nuclear law/regulations | X | X | X | X | X | | X |
| NMAC: records | X | X | X | X | X | | X |
| Design information | X | X | X | X | X | | X |
| PIT and PIV | X | X | X | X | X | | X |
| Domestic reporting requirements | X | X | X | X | X | | X |
| Preparing for and supporting IAEA activities | X | X | X | X | X | | X |
| Nuclear security and PP: DBT | X | | X | X | X | | |
| Radiation protection and health physics | | | | | X | | X |
| QMS | | X | | | X | | X |
| Self-assessments | | X | | X | | | X |
| Additional Protocol Implementation by SRAs | | | | | | | |
| Reporting/updating requirements | X | X | X | X | X | | X |
| Declaration (and updates) preparation and submission | X | X | X | X | X | | X |
| Outreach to AP-affected entities | X | | X | X | X | | X |
| Complementary Access | X | X | X | X | X | | X |
| AP Annex II identification training | | X | | X | X | | X |
| Other | | | | | | | X ⁸ |

⁸ Country 7 indicated that it had other courses aimed at preparing state capacity to implement the AP.

Appendix 3. Sample Safeguards Training Needs Survey

1. Please indicate the name of your organization and country:

2. What are the strongest safeguards-related capabilities in your organization? (Please check all that apply)
 - Legal and regulatory framework
 - Capacity building for the State Regulatory Authority (SRA)
 - Capacity building for Operators/Facility Officers in charge of Safeguards
 - Routine Inspections support
 - Additional Protocol (AP) support
 - Other (please specify) _____
3. How many staff members in your organization support the implementation of safeguards? (Full time/part-time). _____ / _____
4. Please indicate the safeguards and safeguards-related topics that your organization would like to receive training in: (please check all that apply)

4.1 Capacity Building for the State Regulatory Authority

- NPT/Safeguards System (history, evolution, agreements)
- National Nuclear Law/Regulations
- International reporting requirements (to the IAEA)
- Development of procedures (e.g. Inspection and Complementary Access procedures)
- NMAC (including records and reports...)
- Quality Management System
- Integrated Management System (IMS)
- Licensing (export/import)
- Domestic Inspections regulatory framework
- Enforcement
- Negotiating with the IAEA (Subsidiary Arrangements, Facility Attachments)
- Information Management (CSA and AP)
- Non-Destructive Assay (NDA)
- Containment and surveillance (C&S)
- Safeguards by Design
- Domestic (national) Safeguards Inspections

4.2 Capacity Building for Facility Operator/Facility Officer in charge of Safeguards

- National Nuclear Law/Regulations
- Nuclear Material Accounting and Control: Accounting and Operating records
- Design Information (including how to fill-out DIQs)
- Physical Inventory Taking (PIT) and Physical Inventory Verification (PIV)
- Domestic reporting requirements (Accountancy and AP reports at the facility level)
- Preparing for and supporting IAEA verification activities (Inspections, DIV Visits and CAs)
- Nuclear Security and Physical Protection; Design Basis threat
- Radiation Protection and Health Physics
- Quality Management System

4.3 Additional Protocol Implementation by SRAs

- Reporting/Updating Requirements
- Declaration (and updates) preparation and submission
- Outreach to AP-affected entities
- Complementary Access
- AP Annex II Identification Training
- Other (please specify): _____

5. Please list your top five priority training needs from the above list: (In order of importance)

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

6. What method of training delivery would you prefer? (Please check all that apply)

- Bilateral consultations (single support program)
- Regional courses/workshops (multiple member states)
- Hands-on training (instrumentation training, demos, tours, mock exercises)
- Short-term technical training visits (two-three weeks)
- Long-term fellowships (several months)
- E-Learning (websites, computer based, distance learning)
- Course curricula, existing training materials, tailored training modules
- Other: (please describe) _____

7. Please list one critical need (legal authority, training, equipment, access to certain type of facilities, or other things) that would be most impactful and helpful to your organization and staff in the next 1-2 years?

8. Please indicate which Member States, international organizations, or other entities are currently providing safeguards training to your organization. Please list the topics they are addressing with you.

- Australia: _____
- Canada: _____
- People's Republic of China: _____
- European Union: _____
- IAEA: _____
- Japan: _____
- Republic of Korea: _____
- Russian Federation: _____
- United States of America: _____
- Other (Please provide country name and topics): _____

9. Please provide additional comments and suggestions on how you would like APSN to increase opportunities for safeguards training for your organization:

MANY THANKS FOR YOUR COOPERATION!

(Please use additional pages if there is not enough space for your answers)

Appendix 4. Sample Safeguards Training Providers Survey

1. Please indicate the name of your organization and country

2. Please indicate the safeguards and safeguards-related topics that your organization addresses or could address in its training activities: (please check all that apply):

2.1 Capacity Building for the State Regulatory Authority (SRA)

- NPT/Safeguards System (history, evolution, agreements)
- National Nuclear Law/Regulations
- International reporting requirements (to the IAEA)
- Development of procedures (e.g. Inspection and Complementary Access procedures)
- NMAC (including records and reports)
- Quality Management System
- Integrated Management System (IMS)
- Licensing (export/import)
- Domestic Inspections regulatory framework
- Enforcement
- Negotiating with the IAEA (Subsidiary Arrangements, Facility Attachments)
- Information Management (CSA and AP)
- Non-Destructive Assay (NDA)
- Containment and surveillance (C&S)
- Safeguards by Design
- Domestic (national) Safeguards Inspections

2.2 Capacity Building for Facility Operators/Facility Officers in charge of Safeguards

- National Nuclear Law/Regulations
- Nuclear Material Accounting and Control: Accounting and Operating records
- Design Information (including how to fill-out DIQs)
- Physical Inventory Taking (PIT) and Physical Inventory Verification (PIV)
- Domestic reporting requirements (Accountancy and AP reports at the facility level)
- Preparing for and supporting IAEA verification activities (Inspections, DIV Visits and CAs)
- Nuclear Security and Physical protection; Design Basis threat
- Radiation Protection and Health Physics
- Quality Management System
- Self-assessments

2.3 Additional Protocol Implementation by SRAs

- Reporting/Updating Requirements
- Declaration (and updates) preparation and submission
- Outreach to AP-affected entities
- Complementary Access
- AP Annex II Identification Training
- Other (please specify): _____

3. Please list your top five areas of expertise from the above list: (In order of importance)

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

4. What is your methodology for providing formal training to states?

4.1 Do you follow a methodology for assessing recipient needs and requirements? Please describe:

4.2 Please indicate the resources and methods you use to provide training:

- Bilateral consultations (single support program)
- Regional workshops (multiple member states)
- Hands-on training (instrumentation training, demos, tours, mock exercises)
- Short-term technical training visits (two-three weeks)
- Long-term fellowships (several months)
- E-Learning (websites, computer based, distance learning)
- Course curricula, existing training materials, tailored training modules
- Other: (please describe) _____

5. Please indicate to which APSN Member States you are currently providing, or are planning to provide, safeguards training and please indicate the key areas

6. What does your organization hope to achieve through provision of such training?

7. Where does your organization normally provide its training (check all that apply):

- Conference Center/Hotel
- Operating Facilities
- Laboratory
- Training Center in Provider Country
- Regional Center near Recipient Country
- Other: _____

8. Has your organization cooperated with other provider countries or entities on joint outreach during the last three years? If so, please indicate which countries:

- Australia
- Canada
- China
- EU
- IAEA
- Japan
- Republic of Korea
- Russia
- United States
- Other: _____

9. Please share your views on how APSN can help training providers in increasing opportunities for sharing knowledge, training delivery and outreach to recipient countries/organizations?

MANY THANKS FOR YOUR COOPERATION!

(Please use additional pages if there is not enough space for your answers)