INIR Integrated Nuclear Infrastructure Review Missions

Guidance on Preparing and Conducting INIR Missions

IAEA
International Atomic Energy Agency

INIR
INTEGRATED NUCLEAR INFRASTRUCTURE REVIEW MISSIONS

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The Agency's Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are situated in Vienna. Its principal objective is "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world".

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INTEGRATED NUCLEAR INFRASTRUCTURE REVIEW MISSIONS

GUIDANCE ON PREPARING AND CONDUCTING INIR MISSIONS

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CONTENTS

1. INTRODUCTION

1.1. BACKGROUND

An overall description of the nuclear infrastructure issues was published in the brochure *Considerations to Launch a Nuclear Power Programme* (GOV/INF/2007/2) which was targeted mainly at policy makers. Subsequently, the Nuclear Energy Series (NES) publication *Milestones in the Development of National Infrastructure for Nuclear Power* **(NG-G-3.1),** provided more detailed guidance on the three Phases of development outlined in *Considerations.* It described the sequential development through the three Phases for each of 19 issues ranging from the State's national position on nuclear power to procurement.

The NES Report No. NG-T-3.2 on *Evaluation of the National Nuclear Infrastructure Development Status,* based on NES NG-G-3.1, provided a holistic approach to evaluate progress in the development of the nuclear infrastructure. This approach can be used either by a Member State (MS) wishing to review its own progress (self-evaluation) or as a basis for an external review (international peer review) where the MS wishes to invite others to carry out an evaluation of its progress.

The **Integrated Nuclear Infrastructure Review** (INIR) missions are established to provide external peer reviews conducted by the IAEA upon request from an MS (host MS). The guidelines presented here are directed to assist in the implementation of the INIR missions at different Phases of the MS infrastructure development programme.

Besides the INIR missions, MSs may request other missions directed to review and assist on particular issues of the infrastructure development. Different from the INIR missions, these specific issue-focused review missions are not looking into the overall status of infrastructure development but are focused on the individual infrastructure issue requested by the MS. These missions are lead by the IAEA Department most involved with the particular issue. For example, for an issue related to safeguards, the mission would be performed by the Department of Safeguards (SG), an issue regarding regulatory framework would be a mission performed under the Integrated Regulatory Review Service (IRRS) by the Department of Nuclear Safety and Security (NS), etc. The output from the specific issue-focused reviews would be incorporated in the integrated reviews under INIR missions (and vice versa) in order to avoid duplication and conflicting recommendations and/or suggestions.

1.2. OBJECTIVE OF THE GUIDELINES

To provide guidance on preparing and conducting INIR missions.

1.3. SCOPE OF THE GUIDELINES

The scope includes the activities to be undertaken by the Team Leader and Team Members for implementing INIR missions.[1]

1.4. USERS

IAEA staff and external experts assigned to preparing and conducting the INIR missions.[2]

1.5. STRUCTURE

Chapter 2 provides a general description of the INIR missions and the initial arrangements accomplished before starting implementation. The guidance for setting-up the mission and undertaking the preparatory activities is provided in Chapter 3. The guidance for conducting the mission including the review approach and reporting is presented in Chapter 4. The Appendix I describes the main responsibilities assigned to the Team Leader, Team Members, Host Counterpart and Observers. Appendix II gives criteria for classification of actions needed. Appendix III provides an example for the mission report.

[1] The scope specific for each INIR mission is explained in Section 3.2.1.2.

[2] This guidance may also be useful to the MS to make necessary country arrangements for the mission.

2. INTEGRATED INFRASTRUCTURE REVIEW MISSIONS - INIR

2.1. OVERVIEW

The INIR mission is a holistic IAEA coordinated peer review conducted by a team of international experts who have direct experience in specialized nuclear infrastructure areas. The team is lead by a IAEA staff member experienced in providing integrated support to nuclear infrastructure development (usually from the Division of Nuclear Power - NENP) or an external expert under the supervision of this staff member. The team comprises both designated IAEA staff from multiple disciplines and organizational units, and international reviewers recruited from MSs and selected by the IAEA in consultation with the host MS.

The mission objective and scope and the mission work plan are specifically defined and adjusted to meet the needs of the requesting MS.

The major objective of an INIR mission is to help the MS determine its status and identify further development needs, and hence the expectation of a self-evaluation is emphasized. The INIR mission is intended to build upon the self-evaluation in order to provide guidance in areas where further work would be beneficial. It is not intended to be an external critical audit of the national infrastructure but rather is geared to helping the MS, and the IAEA, to recognize areas for further assistance.

The review is based upon the approach presented in NES publications *Milestones* (NES No. NG-G-3.1) and *Evaluation* (NES No. NG-T-3.2) and assumes comprehensive assessment of all nuclear infrastructure issues needed in the specific conditions of a country. The material in the above-mentioned publications is not considered as a requirement, but as assistance in thinking and reasoning for identification of the gaps that need to be filled in each development Phase in order to reach the corresponding Milestone.

The review uses knowledge already obtained by the IAEA and the recommendations of previous review missions, and avoids duplicating and/or contradicting work carried out previously by the IAEA The review scope is adjusted to the degree of development of the different infrastructure issues but is focused on evaluating, as much as it is realistic in a limited time, all parts of the country's nuclear infrastructure. While mainly aimed at countries planning their first NPP, INIR missions may also be applied, with adequate flexibility, in countries with already established nuclear programmes.

The meetings and discussions that take place during INIR missions between the mission members and the host persons contribute to the MS's

understanding of the existing gaps and actions needed for a successful development of the nuclear infrastructure, as well as allowing exchange of experience, and providing feedback on the effective implementation of IAEA Technical Cooperation (TC) assistance. In this regard, each mission may be conducted in the context of the annual TC programme review and planning meetings and a complete or partial participation (i.e. exit meeting) in the mission of the PMO may be considered.

Outcomes of the INIR missions are considered when preparing and updating the TC Country Programme Framework.

2.2. TIMING OF INIR MISSIONS

While INIR missions can be requested at any time during the development of the nuclear infrastructure, they will typically be expected to be arranged in the following sequence:

- Initial
- Follow-ups
- Before invitation of bids.

2.2.1. Initial

The first INIR mission requested by an MS will look at the overall situation in the country regarding the development needs in the 19 infrastructure issues (Table 1) described in *Milestones* (NES No. NG-G-3.1). It is recommended that the MS performs a self-evaluation before requesting an external mission.

2.2.2. Follow-ups

Follow-up INIR missions are part of a continuous process of successive evaluations along the MS development programme. Through the follow-up missions, the IAEA continues supporting the country's work in implementing and improving the national nuclear infrastructure. A follow-up INIR mission will focus on the response to a previous mission's or previous missions' recommendations and suggestions, and on the progress achieved since the last mission. Each follow-up mission builds upon the previous one and provides direction for planning further activities both by the MS and through the IAEA TC programme.

TABLE 1. INFRASTRUCTURE ISSUES AND MILESTONES

ISSUES	MILESTONE 1	MILESTONE 2	MILESTONE 3
National position			
Nuclear safety			
Management			
Funding and financing	Conditions	Conditions	Conditions
Legislative framework			
Safeguards			
Regulatory framework			
Radiation protection			
Electrical grid			
Human resources development			
Stakeholder involvement			
Site and supporting facilities			
Environmental protection			
Emergency planning			
Security and physical protection			
Nuclear fuel cycle			
Radioactive waste			
Industrial involvement			
Procurement			

2.2.3. Before invitation of bids

This INIR mission is implemented at the end of Phase 2. Achieving Milestone 2 is a key stage at which the MS needs to demonstrate that it is "ready to invite bids for the first NPP". Through the use of a comprehensive external evaluation, this stage is the point in time at which the MS is encouraged to present its readiness for the construction of the first NPP to a wider audience. This review will help the MS enhance national and international confidence in the country's ability to embark upon a nuclear power programme, including among potential NPP suppliers.

When an MS considers that it has achieved Milestone 2, it is then recommended that the readiness is confirmed by a comprehensive INIR mission and the results can be used by the MS as part of its demonstration to an

international audience that it has fulfilled all of the expectations in the infrastructure development following the guidance of the IAEA. This demonstration strengthens the national justification that the MS is ready and fully prepared for commercial discussions.

2.3. INITIAL ARRANGEMENTS BEFORE IMPLEMENTING INIR MISSIONS

The first step is usually accomplished through a formal governmental request to the IAEA that is conveyed through the TC Department or Programme.

The following initial arrangements are expected to be accomplished before starting the technical implementation of an INIR mission.

(1) The MS initiated, as part of a TC project, an INIR request through the established official channel with the IAEA (normally the NLO), indicating the tentative scope of the mission and any specific aspects to be included.
(2) The INIR request was processed through TC (SEC/DIR/37 and AM IX/1) and reviewed by staff from various technical departments, led typically by a staff member from the Nuclear Power Engineering Section (NPES). The assigned Project Manager Officer - PMO (TC) and Technical Officer - TO (Department of Nuclear Energy - NE) reviewed the request and, if needed, made further contacts with the requesting institution for clarification.
(3) The financial arrangements including the source of funding (Technical Cooperation Funding vs. “Footnote a” and MS cost sharing) were identified.
(4) The request, together with the joint evaluation and recommendations from PMO and TO, was submitted through standard mechanisms to the IAEA’s technical departments for authorization to proceed with assigned staff as negotiated across the IAEA. If the request was for the comprehensive review mission before the invitation of bids, the Nuclear Power Support Group (NPSG) was informed.
(5) The TO in conjunction with the PMO incorporated the INIR mission into the work plan of the corresponding TC project, as appropriate.
(6) The MS designated a Host Counterpart officer for the mission.

Provided that the above mentioned arrangements are fulfilled, the technical implementation of the mission is undertaken in accordance with the guidelines presented in the following chapters 3 and 4.

3. PREPARATION OF THE MISSION

3.1. RESPONSIBILITY FOR THE INIR MISSION

The TO bears full responsibility for the technical quality of the INIR mission while the PMO bears the responsibility for the proper use of the TCP funds and the overall management and delivery of outputs.

The TO can assume the role of the Team Leader[3] for implementing the mission, or a Team Leader is nominated by the TO after consultation with relevant staff from TC, NE, NS, SG, the Office of External Relations and Policy (EXPO), the Office of Legal Affairs (OLA) and others.

In case that the appointed Team Leader is an external expert, he/she will be overseen by the TO. In any case, the TO retains the full technical responsibility.

3.2. SETTING UP THE INIR MISSION

The Team Leader is in charge of the overall coordination for the technical mission preparation activities. The main general activities in setting up the mission (Fig. 1) include:

- Consulting with the TO, PMO and appropriate technical staff at the IAEA who may provide relevant inputs for the mission
- Confirm in conjunction with the PMO the dates for the mission with the Host Counterpart, taking due account of any holidays, national vacation periods, week structure and working hours.
- Collecting, analyzing and distributing relevant information
- Consulting and seeking agreement with the Host Counterpart as needed

[3] The role of the Team Leader, as well as the Team Members, Host Counterpart and Observers, is described in Appendix I.

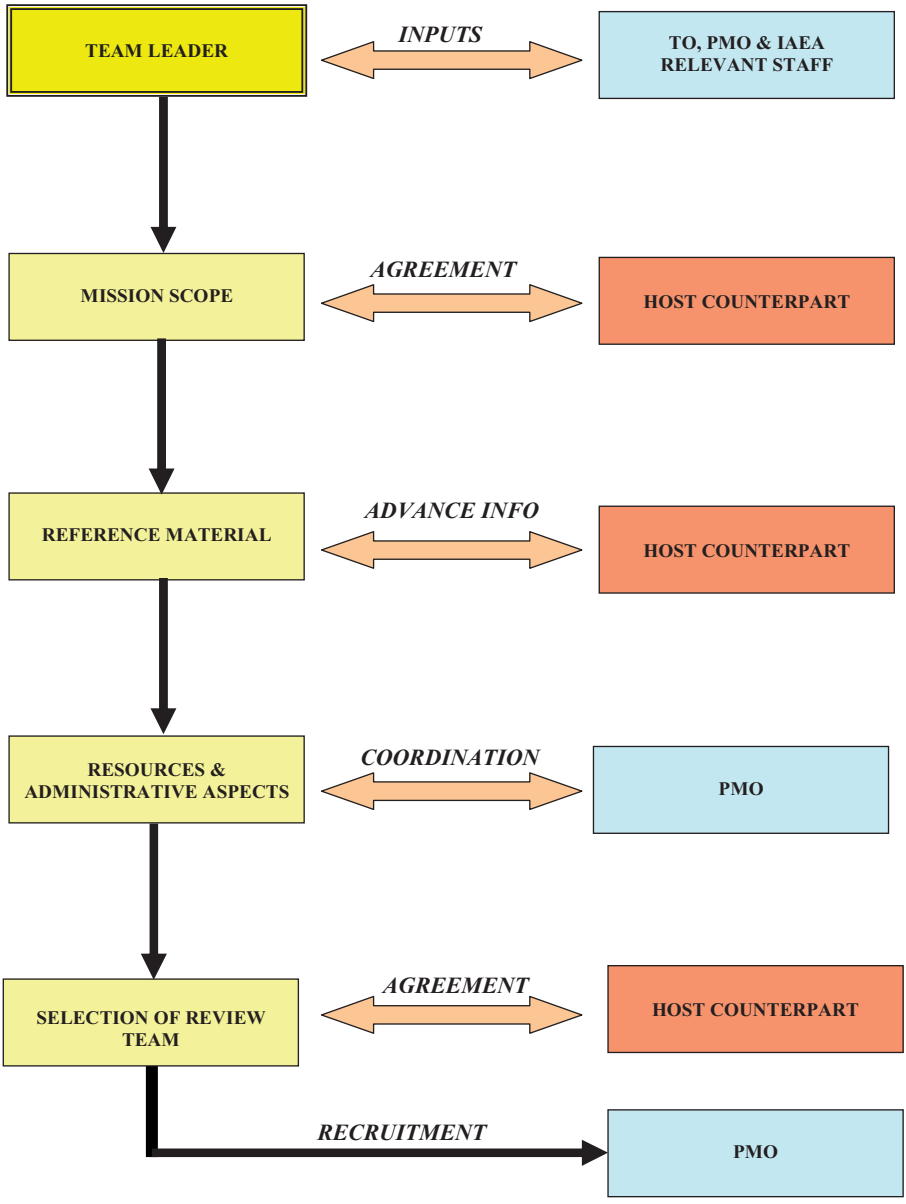


FIG. 1. Setting up the mission.

- Selecting Team Members in conjunction with the Host Counterpart
- Overseeing all of the necessary technical arrangements for implementing the mission.

3.2.1. Specific objective and scope of the INIR mission

3.2.1.1. Mission objective

Evaluation of the development status of the infrastructure issues described in *Milestones* (NES No. NG-G-3.1) for Phases 1 and 2 by applying the holistic approach described in *Evaluation* (NES No. NG-T-3.2).

3.2.1.2. Mission scope

The detailed mission scope is defined by the Team Leader in conjunction with the Host Counterpart on the basis of:

1. The current infrastructure development (Phase 1 or Phase 2) of the MS.
2. Particular requests from the MS
3. Results of MS self-evaluations
4. Available information from previous IAEA missions.

3.2.2. Reference material

(1) *Considerations to launch a nuclear power programme*, GOV/INF/2007/2 (2007)
(2) *Milestones in the Development of a National Infrastructure for Nuclear Power*, NES No. NG-G-3.1
(3) *Evaluation of the National Nuclear Infrastructure Development Status*, NES No. NG-T-3.2
(4) Other publications as appropriate from the bibliography included in *Milestones* (NES No. NG-G-3.1) noted above
(5) Reports from all previous IAEA missions that are relevant to the infrastructure subject
(6) Information provided by the Host Counterpart, specially the results from self-evaluations.

3.2.3. Resource estimations and administrative arrangements

The number of experts and duration of the mission will logically depend on the request from the MS. Typically:

(1) Initial and follow-up mission during Phase 1 and early Phase 2: about 4 persons x 1 week
(2) Before invitation of bids: about 8 persons x 2 weeks
(3) Preparation / coordination:about 1 person x 4-6 weeks.

Administrative arrangements are accomplished under the normal TC procedures: recruitment, travel, per-diem, etc.

3.2.4. Selection of the review Team Members

The Team Leader proposes Team Members in accordance with the qualification and experience required. The selection criteria will normally consider:

- Involvement of a mix of generalists and specialists, depending on the particular needs of the MS
- If feasible, at least one expert in the mission team should be fluent in the local language
- Expert suitability upon consultation with the Host Counterpart
- Consultation with TO, PMO and relevant senior IAEA staff regarding qualified experts.

In the case of follow-up missions, for reasons of continuity, it is preferable that the Team Leader and some of the reviewers in the team have participated in the previous mission. The Team Leader will also take the lead in reviewing progress against the implementation of previous recommendations and suggestions.

The roles and responsibilities of the Team Leader and Team Members are described in Appendix I.

The review Team Members are recruited from MSs, IAEA staff, and external consultants to the IAEA, and are designated experts in specific infrastructure issues. In the case of missions to countries receiving assistance from the IAEA, there may also be involvement by relevant IAEA TC officer(s) for the country. In particular the PMO involvement during the final part (exit meeting) will allow better understanding of the needs of the country and facilitate tailoring the TC programme to these needs.

In the selection of the team for the INIR mission consideration is to be given to continuity, not only of previous missions, but also to the technical expertise that had worked with the MS concerned on meeting the infrastructure issues and previous guidance and training activities in the MS. This may be most relevant in specific specialist areas such as nuclear law, where the particular expertise needs to be included in the team. However care is to be

taken to ensure that judgment based upon previous activities and previous personal involvement does not impair the independence of the INIR review, in particular in the mission before invitation of bids.

The Team Leader contacts potential Team Members regarding their availability for the mission. Suggested Team Members will then be recruited for the mission in accordance with IAEA TC procedures. This process should start at least three months before the mission.

3.3. PREPARATION ACTIVITIES

Fig. 2 gives an overview of the preparation activities undertaken by the Team Leader, the Team Members, and expected to be undertaken by the Host Counterpart.

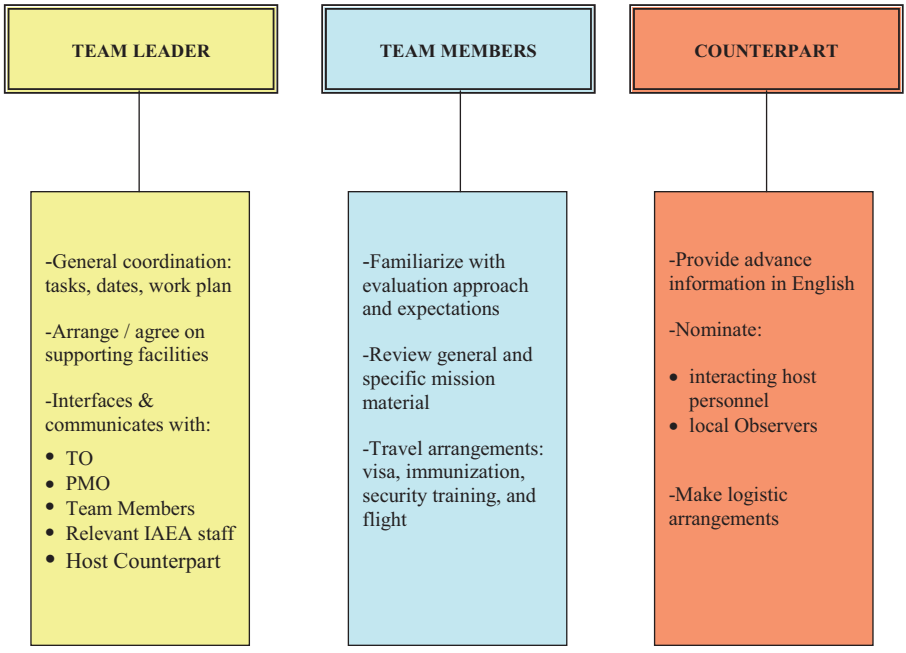


FIG. 2. Outline of main preparation activities.

3.3.1. Preparation by Team Leader

3.3.1.1. General

- Assign tasks to Team Members at the earliest opportunity so they may concentrate on their specific issues.
- Ensure that all Team Members share common information and focus so as to perform as a harmonized team.
- Confirm in conjunction with the PMO that appropriate travel arrangements have been made by the team, ensuring that all Team Members arrive in the host MS with sufficient time to attend an adequate team briefing prior to meetings with the host MS persons.
- Develop and agree on the work programme and agenda with the Host Counterpart in advance of the mission.

3.3.1.2. Supporting facilities

Prior to the mission review, the Team Leader will make arrangements with the Host Counterpart to ensure the provision of necessary support facilities:

- Since all reviews are conducted in English, the Counterpart will provide any necessary interpretation facilities to enable the Team Members to do their work.
- At all times there is at least one meeting room of sufficient size at the disposal of the reviewers, to enable them to work and hold discussions.
- At least one computer with Internet connection, printer and screen projector is made available. The computer is provided with adequate desk tools and has downloaded in it all the advance and reference material (legal and regulatory texts, documents describing the relevant MS organizations, manual, etc.) that can be useful for the conduct of the mission.
- Administrative support is made available by the host organization throughout the review. If this is not possible a request to the IAEA to provide administrative support will be considered.

3.3.1.3. Interfaces/communication

Internal within the IAEA and with Team Members

The Team Leader ensures that communication is established and maintained with the TO, PMO, Team Members and relevant staff of all IAEA involved Departments.

With the Host Counterpart

The Team Leader will:

- Establish a liaison with the designated Host Counterpart officer for the INIR mission
- Discuss and seek agreement on the scope and expectations in preparation for the review mission
- Request nomination of the host persons in each review area who will be the primary contacts (Host Contacts) with the reviewers in each infrastructure issue.
- Agree with the Host Counterpart the local and external Observers that will be trained during the mission
- Agree on the final scope of the mission
- Identify the advance material to be provided by the country, including the results from self-evaluations
- Identify information that must remain confidential
- Agree with the Host Counterpart on the provisional schedule and the logistical aspects for conducting the review mission
- Provide a list of the documentation required in advance of and during the review.

3.3.2. Preparation by review Team Members

3.3.2.1. Review approach

The review is conducted to evaluate the infrastructure development in accordance with the *Milestones* (NES No. NG-G-3.1) using the approach described in *Evaluation* (NES No. NG-T-3.2). It is important to note that the methodology followed is not that of an audit, which aims to verify compliance with procedures and standards. The INIR mission aim is to review ongoing activities with the assistance of peers and the host MS to provide confidence

that appropriate implementation is taking place and gaps and aspects that need attention or correction are identified.

Reviewers are expected to apply their good judgment and experience to interpret the particular MS situation, identify gaps and develop their conclusions based upon deep reasoning and knowledge.

The Team Leader will describe the specific scope and expectations for the mission performance to the Team Members.

3.3.2.2. Supporting documents

Each review expert needs to be familiar with the following supporting material for each assigned issue:

General

- Generic information: publications related to the assigned issues that are indicated in the *Milestones* "Bibliography" (NES Series No. NG-G-3.1).
- Detailed information such as:
  - Tables containing the "Basis for Evaluation" related with the assigned issue, included in Session 3 / *Evaluation* (NES No. NG-T-3.2).
  - TC Country Programme Framework and latest information on the design, implementation and trends of the TC national programme.
  - Other available IAEA data bases and information as determined by the Team Leader.

Specific

Prior to the start of the mission, the Team Members review the advance reference material provided by the Team Leader, which typically includes:

- Reports from previous missions in the MS
- Available information that the MS has provided in advance. This information, when available, will facilitate the performance and effectiveness of the mission. Desirable information that the MS might provide includes:
  - Results of MS self-evaluations (if available)
  - Actions undertaken since the last IAEA evaluation: outline of the significant changes in the development of the infrastructure.
  - Government reports describing status of infrastructure issues.

3.3.2.3. Travel arrangements

- Obtain a visa, if required.
- Sign confidential undertakings.
- Bring a laptop computer with the appropriate electrical adapter, word processing, presentation and other software, as required, or if this is not possible, inform the Team Leader in sufficient time, so that alternative arrangements may be made.
- Undergo, as appropriate, the IAEA training for "Basic Security in the Field" and "Advanced Security in the Field".
- If the mission involves exposure to ionizing radiation, clearance by the IAEA radiation safety regulator.
- Arrange to receive the required immunizations.
- Provide information to the Host Counterpart and the IAEA Team Leader regarding flight (travel) details.

3.3.3. Preparation by Host Counterpart

The following activities are expected to be accomplished by the Host Counterpart.

3.3.3.1. Advance information

The results of the self-evaluations of the infrastructure implementation status, if available, are expected to be provided by the Host Counterpart.

For follow-up missions, the Counterpart is expected to provide a document that outlines the significant changes in the development of the national nuclear infrastructure that took place since the previous mission.

The advance material in English is expected to be provided to the IAEA Team Leader at least one month before the mission.

3.3.3.2. Nominate interacting host persons and observers

- The Host Counterpart will nominate a **Host Contact** person in each issue area as the primary contact with the team during the review.
- The Host Counterpart will be invited to nominate local Observers as well as accept external Observers. The participation of the Observers during the review is described in Appendix I.

3.3.3.3. Logistic arrangements

The Host Counterpart is expected to:

- Provide assistance for hotel reservations
- Make arrangements for adequate working space as described in Section 3.3.1.2
- Make arrangements for communications in particular with the IAEA headquarters
- Provide local transportation
- Make arrangements for translators and technical escorts, if needed
- Arrange availability and schedule of Host Contact persons for the mission
- Make the necessary arrangements for entry to the facilities, including clearance and any specific specialist training.

4. CONDUCT OF THE MISSION

Fig. 3 provides an overview of the steps for conducting of the mission.

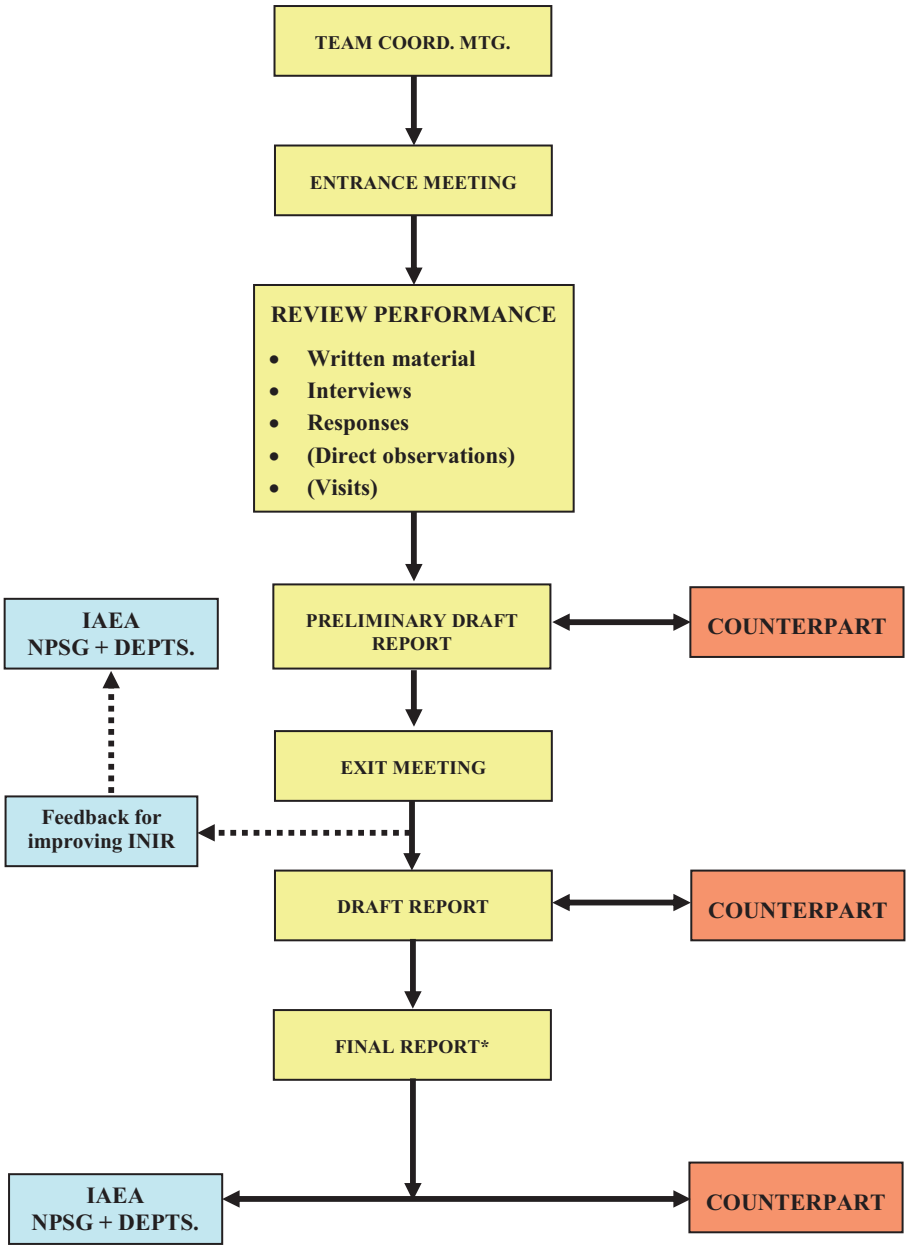
4.1. TEAM COORDINATION MEETING

The team coordination meeting can be arranged to take place:

(a) In the host MS, scheduled on the first day of the mission; or
(b) IAEA headquarters, before traveling to the duty place.

Option a) will typically be preferred for reviews during Phase 1 and early Phase 2, while option b) will be considered for the extensive review before invitation of bids at the end of Phase 2.

The meeting will discuss the specifics of the mission including the methodology for the review and the evaluations. The purpose is that all Team Members have a common understanding of the background, context and objectives of the mission, basis for the review, type of information needed and the way it will be evaluated. The Team Leader will brief the team on particular aspects, sensitive areas, priorities, schedule, approach and expectations



*** In the case of the mission before invitation of bids (see Section 2.2.3), the FINAL REPORT is submitted to NPSG for any additional comments prior to delivering to the Counterpart**

FIG. 3. Conduct of the mission.

regarding the format and content of the deliverables by the Team Members. The Team Members will report their first impressions of their subject area based on their review of the advance reference material. The Host Counterpart should attend the team coordination meeting.

4.2. ENTRANCE MEETING

An entrance meeting will be conducted with senior representatives from the host MS. At the meeting, both the IAEA team and the host MS representatives will be expected to present their primary objectives for the review. The IAEA Team Leader will provide a brief outline of the team work plan, approach and expectations for the mission, emphasizing that it is not an audit or inspection, but that it will be conducted as a peer review in cooperation with the host country's organizations.

As appropriate, a more detailed introductory and informational meeting with senior representatives from key organizations scheduled to be visited during the mission might be arranged. This can contribute to obtaining the goodwill and fullest cooperation of the major organizations and improve the effectiveness of the mission. If practicable, inviting as many as possible of the host country's personnel directly involved in the review will help to prepare them and let them know what to expect.

4.3. PERFORMANCE OF REVIEW

The review predominantly concentrates on evaluating the fulfillment of the conditions for the corresponding infrastructure development Phase as described in *Milestones* (NES No. NG-G-3.1). The "Basis for Evaluation" presented in the tables included in *Evaluation* (NES No. NG-T-3.2) are applied in order to make a consistent and comprehensive overview.

During all review activities, frank and open communications between all participants is to be promoted. This will enhance the quality of the review and optimize the benefits to the host country.

Reviewers apply three main methods to acquire information for identification of possible gaps in infrastructure issues:

- Review of written material
- Interviews
- Response to previous missions.

As appropriate, the Team Leader may supplement these methods with:

— Direct observations
— Visits to organizations and facilities.

4.3.1. Written material

The review of the written material has two stages.

The first stage is performed prior to the start of the mission. Team Members review all information provided by the host MS and by the IAEA (see Section 3.2.2). The Team Leader provides the Team Members with the advance reference material, prepared and structured by the host MS and by the IAEA to reflect the infrastructure issues for review agreed to during the preparation of the mission.

The second stage is performed during the mission. Additional material in the form of documents, presentations and examples of MS's work will be reviewed. Results of the host MS's self-assessments, including identification of forthcoming actions, if available, will be helpful. This information will be taken into consideration in analyzing and formulating recommendations and suggestions to address the identified gaps in the infrastructure development programme.

4.3.2. Interviews

The prime objective of the mission interviews is to gather information not covered by the written material and, where necessary, to seek clarification of the written information provided.

The Team Members use the tables with the "Basis for Evaluation" included in *Evaluation* (NES No. NG-T-3.2) as a guide to improve the efficiency by which relevant information is collected. These tables provide a systematic and effective agenda for discussions and help to focus discussions on those topics that are most directly relevant to the review mission. The Team Members may deviate from the structure and content of the tables if alternative questioning methods might be beneficial in resolving or clarifying infrastructure aspects. In line with the review of the relevant written material, the interviews can be linked to:

- Clarify open topics arising out of the documentation review.
- Assess the implementation of relevant activities covered under TC projects.
- Evaluate aspects of the host MS's self-assessment.

The Team Members conduct interviews as a mutual exchange of views and not as an interrogation of the host. The Team Members lead the interview but allow time for the host to explain and illustrate specific points.

4.3.3. Response to previous INIR mission results

The review of responses to recommendations and suggestions from previous INIR missions will be carried out in parallel following the normal review mission approach. Information required to reach a judgment will be gathered by a combination, as appropriate, of review of written material, interviews with personnel, direct observations of the organization and activities, and visits.

The principal written material will be the action plan developed by the MS, if available. Additional written material may be necessary to demonstrate the measures implemented and the progress made. The Team Members will be looking for evidence to support results of the progress and achievements recorded in the action plan and may provide further advice as appropriate.

4.3.4. Direct observations

Direct observation of infrastructure activities may be arranged complementary to the review of written material and the interviews. The observations focus, as appropriate, on practices, use of procedures, reporting practices, and quality and management of the infrastructure development programme.

4.3.5. Visits to organizations and facilities

Interviews and direct observations, as appropriate, may be carried out on the sites of involved organizations.

4.3.6. Daily team meetings

At the end of each mission day, the team will meet to discuss the day's main results. If this is not possible, then a telephone discussion may be arranged if the team is geographically separated). The Team Leader will establish the style and conduct of these meetings.

Items to be discussed may include:

- Summary by each Team Member of the day's key results.
- Insights and observations regarding the implications of the results.
- Feedback on potential new topics to be added to the initial review plan.

- Gaps, overlaps and areas where the information gathered that day was not clear.
- Inconsistencies between the information gathered that day and previous information.
- Observations and significant concerns or positive features which may form the basis for recommendations and suggestions.
- Elements which need to be brought to the attention of the entire team, especially those that have a bearing on the remainder of the mission.
- Plan to obtain missing information or resolve new topics that do not appear in the existing schedule.
- Activities and assignments to be conducted during the next day to enable all Team Members to provide input to the key topics to be addressed.
- Matters that the Team Leader needs to refer to the Host Counterpart or Host Contact persons.
- The status of each Team Member's written input to the draft mission report.

4.3.7. Analysis of results and report drafting

Each mission is likely to be different, thus, it is not practical to suggest a timetable for all the mission's activities. However, at the earliest practical opportunity the Team Leader should hold a team meeting to discuss and formulate the team's conclusions, and identify potential recommendations and suggestions based on the analysis of the team's review of written material, interviews with personnel, direct observations and visits:

- Each Team Member makes preliminary evaluations for those areas of the mission for which he/she was assigned, and aims to gain an understanding and share information in other relevant review areas.
- When discussing each Team Member's input, the Team Leader ensures team agreement on the broad conclusions and recommendations and suggestions to the host MS.
- When the team agrees upon a Team Member's results, the Team Leader includes the Team Member's written input into the preliminary mission report.

4.3.8. Recording and evaluation

4.3.8.1. Recording

During interviews, direct observations and visits, Team Members make detailed notes and record all relevant information gained together with its source. The information is recorded at the earliest opportunity and serves in developing the mission report. The recordings may include:

- The official names or titles of organizational units and the positions interviewed.
- A summary of points recorded or actions observed during the interview or visit and their source.
- Comments on the role, responsibilities and effectiveness of the organization.
- Documentation obtained or reviewed.
- Comments on strengths and areas for improvement within the organization, as perceived at the time.
- A list of elements that should be brought to the attention of other Team Members.
- The full meaning of abbreviations or acronyms used.
- Information needed to complete those parts of the "Basis for Evaluation" tables (NES No. NG-T-3.2) that were not previously completed.

Each Team Member summarizes the results for the day and records the insights and judgments in the technical notes in order to support effective discussion of all subject review areas at the daily meeting with other Team Members. This meeting creates the opportunity for Team Members to consolidate their views, reach consensus where necessary and formulate the way in which their results are captured in the mission report.

4.3.8.2. Evaluation

The Team Members evaluates and draw conclusions, which may be further developed into recommendations and suggestions.

The Team Members present the results of their evaluations and observations using the standardized forms (Annex II).

The results of evaluations have their bases in known and formally documented evidence relating to the guidance in the *Milestones* approach (NES No. NG-G-3.1).

4.4. PRELIMINARY DRAFT REPORT

During the latter part of the mission, the Team Leader will compile a preliminary draft report based on daily inputs from the IAEA team to capture the review results. Appendix III provides an example for the report format. The Host Contacts will be provided with the individual sections of the preliminary draft report for review as soon as feasible. The hosts are invited to comment on this report during the mission to ensure technical accuracy and common understanding of the reported results. At the end of the mission, a copy of the preliminary draft report is provided to the Host Counterpart.

4.5. EXIT MEETING

The review mission concludes with the exit meeting. This consists of a presentation of the main results by the team, possibly followed by a discussion with the key representatives from the host MS on possible ways to address the points that have been raised.

The exit meeting will normally be attended by:

- The IAEA team
- The Host Counterpart and, as appropriate, Host Contact persons and Observers
- Representatives from other organizations involved in the infrastructure development programme.

The IAEA Team Leader summarizes the main results of the mission. The format of the exit meeting may vary widely, but will normally include:

— A description of the mission objective and scope.
— Areas reviewed and activities conducted.
— Identified strengths and areas for improvement.
— Other observations that the team feels need to be highlighted to the host MS.
— Recommendations and suggestions for planning further activities.

The Team Members may, as appropriate, provide a brief verbal report of results in their own subject review areas.

The preliminary draft mission report provided before the exit meeting will allow the Host Counterpart to review and provide comments on the contents. The Team Leader will explain to the Host Counterpart that the

document is a "preliminary draft report" which will require further review and subsequent approval by the IAEA before a final mission report is issued.

4.6. FEEDBACK FOR IMPROVING INIR MISSIONS

A short team meeting will be convened (this could be immediately following the exit meeting) to gather feedback from the Team Members on the performance of the review mission. The purpose is to discuss strengths and weaknesses and provide suggestions on what could be improved in future INIR missions. These comments will be collated by the Team Leader and, upon return to the IAEA, subsequently forwarded to the NPSG, the senior management of TC and of the other IAEA departments involved.

4.7. DRAFT REPORT

Using the preliminary draft report, the Team Leader develops the draft report after the mission. The draft report includes modifications to the preliminary draft report to reflect relevant inputs from the exit meeting, any subsequent discussion with the Host Counterpart and any necessary editorial style modification. The draft report is reviewed by all Team Members and their comments are incorporated by the Team Leader. The draft report is then sent to the Host Counterpart for comments. The goal is to have the draft report sent to the Host Counterpart within one week following the exit meeting.

The Host Counterpart is expected to collect all comments from participating organizations within the host MS and submit a complete set of comments to the Team Leader. The comments from the Host Counterpart are expected to be limited to elements relating to the factual correctness of the information contained in the report. The return of the Host Counterpart's final comments to the Team Leader is expected within two weeks of receiving the Team Leader's draft report.

4.8. FINAL REPORT

Upon receipt of any comments from the Host Counterpart, the Team Leader, with appropriate coordination with the other Team Members, assesses the comments and produces the final INIR mission report.

The final report is sent to the host country through the official channels. The IAEA restricts initial distribution to the authorities concerned, the

contributors to the report and responsible IAEA staff. Any further distribution is at the discretion of the host MS.

The report is not made publicly available unless the host MS specifically requests otherwise. However, in the interest of openness, countries are encouraged to make their report public.

The results of INIR missions may be considered as inputs for future related IAEA activities such as TC support programmes, extra-budgetary programmes and development of further assistance in support of national nuclear infrastructure.

The mission report includes a "disclaimer" indicating that the evaluation does not provide/cannot be interpreted as a certification or "release stamp".

4.9. ACTION PLAN

Using the results from the INIR final report, the host MS is expected to develop an action plan to specify actions to be taken to further develop and improve the national nuclear infrastructure by addressing recommendations and suggestion from the mission report.

For certain countries, the action plan may also indicate what further IAEA input or assistance the country desires (e.g. documentation, expert missions, training, etc.) as well as the assistance that is or could be provided by other supporting organizations/countries. Any subsequent or consequent request for IAEA assistance would need to be channelled through the normal TC mechanism.

The decision to implement an action plan to address the mission's recommendations and suggestions lies entirely with the relevant authorities of the MS concerned.

ACRONYMS

EXPO	Office of External Relations and Policy
INIR	Integrated Nuclear Infrastructure Review
IRRS	Integrated Regulatory Review Service
MS	Member State
NENP	Division of Nuclear Power
NEPIO	Nuclear Energy Programme Implementing Organization
NES	Nuclear Energy Series (publications)
NLO	National Liaison Officer
NPES	Nuclear Power Engineering Section
NPSG	Nuclear Power Support Group
NS	Department of Nuclear Safety and Security
OLA	Office of Legal Affairs
PMO	Programme Manager Officer
PO	Project Officer
SG	Department of Safeguards
TC	Department of Technical Cooperation
TCF	Technical Cooperation Funds
TCP	Technical Cooperation Project
TO	Technical Officer

Appendix I

ROLE AND RESPONSIBILITIES OF INIR TEAM LEADER, TEAM MEMBERS, HOST COUNTERPART AND OBSERVERS

I.1. TEAM LEADER

Taking into account that each MS has different national conditions and will be in different stages of infrastructure development, the Team Leader needs to recognize that there may be a need to adopt an appropriate pragmatic and flexible approach aimed at achieving the maximum effectiveness of the mission.

Primary responsibilities are:

- Serve as the official IAEA liaison with the Host Counterpart prior to, during and after the review mission.
- Consult with TO, PMO and appropriate IAEA technical officers in areas related to the mission.
- Determine the specific scope of the mission and seek agreement with the Host Counterpart.
- Collect the necessary information and material.
- Develop the detailed work plan for the mission, in conjunction with the Host Counterpart.
- Identify appropriate Team Members in conjunction with the Host Counterpart and with TO, PMO and appropriate IAEA technical officers.
- Interact with PMO providing information for recruiting the team and travel arrangements.
- Assign tasks to Team Members.
- Provide Team Members with appropriate pre-mission information.
- Interact with the Host Counterpart regarding logistic arrangements.
- Participate as a full Team Member in the mission, if other duties allow sufficient time.
- Lead the mission including supervising the review, ensuring schedules are met and providing leadership in the resolution of subjects that may arise.
- Lead the initial team meeting, entrance and exit meetings.
- Ensure that the team works in a consistent and cohesive manner.
- Communicate with Team Members on a regular basis prior to and during the mission, in order to ensure that Team Members are adequately prepared and informed.

- Ensure that the objectives of the mission are met.
- Provide guidelines for the conduct of the daily meetings.
- Collect the information for the mission's preliminary draft report of the mission based on the contributions from the Team Members.
- Prepare the draft report based on the preliminary report and comments received from the Host Counterpart and Team Members.
- Submit the draft report to the Host Counterpart for comments.
- Finalize the mission report based on the comments received from the Host Counterpart and Team Members.
- Issue and distribute the final report.

I.2. TEAM MEMBERS

Primary responsibilities are:

- Make necessary preparations for the mission on the basis of information provided by the IAEA Team Leader.
- Conduct the mission as directed by the IAEA Team Leader.
- Participate in the team coordination, entrance, daily and exit meetings.
- Take the lead during interviews with the MS's hosts.
- Evaluate the MS's observations and provide conclusions.
- Review jointly with the team all conclusions, recommendations, suggestions and good practices.
- Provide daily input to the preliminary report, as directed by the Team Leader.
- Review the completed preliminary draft report.
- Maintain appropriate confidentiality of sensitive information in accordance with the MS's confidentiality agreement.
- After completion of the mission, provide comment to the IAEA on the mission performance and suggestions for improvement.

I.3. HOST COUNTERPART

The Host Counterpart is expected to:

- Act as the official MS liaison with the Team Leader.
- Coordinate overall host arrangements for the mission.
- Provide for the security of the Team Members.

- Work in conjunction with the Team Leader to determine the specific scope and work plan of the mission.
- Provide consent to the proposal for Team Members.
- Provide the advance information in English.
- Designate and provide information/instructions to the host Contacts and host Observers.
- Ensure availability of relevant local experts to address all the 19 infrastructure issues.
- Arrange provision of adequate logistic facilities and support.
- When possible, coordinate activities in a single location to facilitate efficient work.
- Participate in the initial and exit meetings, and other team meetings when invited by the Team Leader.
- Provide comments to the preliminary draft and to the draft mission report.

I.4. OBSERVER

The main purpose of an Observer taking part in the INIR mission is to gain insight into the review process and acquire knowledge that can be used for performing self-evaluations at their own MS and/or participate as a Team Member in a future INIR mission. The Observer can be a person of the host MS appointed by the Host Counterpart, or a person from any other MS agreed by the Host Counterpart. The scope of the Observer's involvement is agreed to by the IAEA Team Leader and the Host Counterpart prior to the start of the mission.

Typically the Observer will be expected to:

- Attend the entrance meeting.
- Attend team activities, as available.
- Participate in daily team meetings.
- Observe the overall review process with regard to the roles and responsibilities of the participants, the review methodology and the mission report development.
- Attend the discussions between the Team Members and hosts.
- Watch the direct observation activities.
- Review the material provided for the mission.
- Maintain Observer status and seek clarification if necessary.
- Prepare notes concentrating on aspects of benefit to his/her country's situation and discuss them with the Team Leader.
- Attend the exit meeting.

Appendix II

CRITERIA FOR CLASSIFICATION OF ACTIONS NEEDED

The classification of the "Actions Needed" for each of the "Conditions" identified in the ***Evaluation*** publication (NES No. NG-T-3.2) will be done through a consensus of the INIR team, and not based solely upon the judgment of any individual Team Member. Note that the classification applied to each "Condition" applies at the point in time at which the INIR mission is conducted and the classification may therefore change if and when future evaluations are conducted.

The proposed classifications will be provided to the Host Counterpart, who will have the opportunity to question these classifications (as well as any of the associated "Evidence" and "Observations").

It is noted that if the mission is accomplished early in the Phase, typically most of the conditions will be classified as "Significant Actions Needed".

The following are the criteria for classification:

Significant Actions Needed

The evidence indicates that there is considerable effort still needed to realize the stated "Condition", and that achievement of this "Condition" is needed in order to be able to sustain overall progress in developing an effective national nuclear power infrastructure.

Minor Actions Needed

The evidence indicates that the there is some effort still needed to realize the stated "Condition". However, the current status supported by the on-going activities mostly achieves the desired "Condition".

No Actions Needed

The available evidence indicates that the intention underlying this "Condition" has been achieved. However, as work continues on the infrastructure knowledge and implementation, care has to be taken to ensure that this classification remains valid.

Appendix III

EXAMPLE OF AN INFRASTRUCTURE REVIEW MISSION REPORT

INIR

INTEGRATED NUCLEAR INFRASTRUCTURE REVIEW MISSION

REPORT ON

"TITLE OF THE MISSION"

Counterpart, city, country

Date

Technical Cooperation Project xxxxxxx

IAEA Infrastructure Review Team

Team Leader	xxx, IAEA
Team Members	xxx, xxx
	xxx, xxx
	…, …
	…, …

CONTENTS

Annex I

EXAMPLE: SUMMARY OF EVALUATION RESULTS

1 National Position	Phase 1
Condition	Evaluation status
1.1 Safety, security and non-proliferation needs recognized	Minor Actions Needed
1.2 NEPIO established and staffed	No Actions Needed
1.3 National strategy defined	No Actions Needed
2 Nuclear Safety	Phase 1
Condition	Status
2.1 Understanding of key elements of nuclear safety	Minor Actions Needed
2.2 Need for inter-governmental instruments on safety	No Actions Needed
2.3 Support through international cooperation	Significant Actions Needed
3 Management	Phase 1
Condition	Status
3.1 Energy strategy and nuclear power compatibility analysed	Minor Actions Needed
3.2 Unique Member State conditions evaluated	No Actions Needed
3.3 Available nuclear technologies identified	No Actions needed
3.4 Ownership options and operational responsibilities considered	Significant Actions Needed
3.5 Authorities and responsibilities established	No Actions Needed
3.6 Appropriate expertise and experience	Minor Actions Needed
3.7 The management systems of all participating organizations are used to promote and support a strong safety culture	Significant Actions Needed
4 Funding and Financing	Phase 1
Condition	Status
4.1 Adequate funding provided for the NEPIO to fully assess the commitments required to implement a nuclear power programme	Significant Actions Needed
4.2 Strategies established for funding and financing	No Actions Needed

Note: The forms for the other infrastructure issues can be produced using the information in the Evaluation publication (NES No. NG-G-3.1)

Annex II

EXAMPLE: EVALUATION FORMS

Evaluation form for infrastructure issue: National Position

1 National Position 1.1 Safety, security and non-proliferation needs recognized	Evidence	Phase 1 Observations
Basis for Evaluation		
Official documentation clearly demonstrating the government's commitment to the safe, secure and peaceful implementation of nuclear power for the long term.		
EVALUATION: Significant Actions Needed □	Minor Actions Needed □	No Actions Needed □

Evaluation form for infrastructure issue: National Position

1 National Position 1.2 NEPIO established and staffed		Phase 1
Basis for Evaluation	Evidence	Observations
The charter showing that the NEPIO has been established by and reports to a senior government minister		
The roles and responsibilities defined in the charter are known by other government ministries and key members of the NEPIO.		
The NEPIO charter clearly charges and authorizes the preparation of a comprehensive report to identify the commitments and conditions necessary to establish a national nuclear power programme. It defines an adequate scope of investigations and clear definition of objectives and timescales. It should identify how its mandate and activities fit with the overall plan for implementing the nuclear power option.		
A clear description of how the NEPIO operates in terms of funding, office accommodation and equipment, and reference material.		

Evaluation form for infrastructure issue: National Position (cont.)

1 National Position 1.2 NEPIO established and staffed		Phase 1
Basis for Evaluation	Evidence	Observations
Evidence showing adequate interactions between, and support from, appropriate ministers such as those responsible for energy, environment, etc.		
A documented budget planning and reporting process showing that appropriate funding is provided to and expended by the NEPIO to fulfil its charter in the scheduled time.		
Organization chart; job descriptions and CVs of members demonstrating appropriate skills, qualifications and experience to address all of the infrastructure issues based on requirements in the publication *Basic infrastructure for a nuclear power project* (IAEA-TECDOC-1513). This includes appropriate use of consultants and the demonstration that the organization is an 'intelligent customer' (i.e., the organization has a clear understanding and knowledge of the product or service being supplied)		
EVALUATION:	Significant Actions Needed ☐	Minor Actions Needed ☐ No Actions Needed ☐

Evaluation form for infrastructure issue: National Position

1 National Position 1.3 National strategy defined		Phase 1
Basis for Evaluation	Evidence	Observations
Comprehensive report produced by the NEPIO covering all areas identified in the Milestones publication (NG-G-3.1) and recognizing the resources and timescales required for the activities required for Phase 2. A demonstration that the Member State can provide the overall resources required integrated across all areas.		
Executive summary of the comprehensive report is based on the detailed report, contains estimates of total resources and timescales and has been properly reviewed by senior government officials.		
EVALUATION: Significant Actions Needed □	Minor Actions Needed □	No Actions Needed □

Note: The forms for the other infrastructure issues can be produced using the information in the Evaluation publication (NG-T-3.2).

IAEA

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