

NUCLEAR POWER EVALUATION WORKSHOP

Mombasa, 2010

INTRODUCTION TO BASIS FOR NATIONAL NUCLEAR POWER INFRASTRUCTURE EVALUATION



August, 2010



IAEA

International Atomic Energy Agency



V. Nkong-Njock

INTRODUCTION EVALUATION



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Are we nearly there yet?

Covers milestones 1 and 2

Addresses each of the 19 infrastructure issues

Lists evidence that conditions have been met

Infrastructure

Can be used to review progress at any point

Provides a methodology for self assessment and external review

Milestone 2 – Ready to invite bids

Infrastructure issue	Milestone 1 – Ready to make a knowledgeable commitment to a nuclear programme		Milestone 3 – Ready to commission and start the first nuclear power plant
3.2 Nuclear safety	Recognize the need for : <ul style="list-style-type: none"> • Relevance of nuclear safety • Long term commitment for the first nuclear power plant • Cooperation in international partnerships • Need of intergovernmental instruments on safety • Support through 	<ul style="list-style-type: none"> • Safety responsibilities by all stakeholders recognized • Legal and governmental framework consistent with Fundamental Safety Principles implemented • Safety culture evaluated 	<ul style="list-style-type: none"> • Safety culture adopted by the constructor, engineer, operator and regulatory body organisations • Regulatory body prepared to determine whether an adequate appreciation for safety is present and with the
3 Management	<ul style="list-style-type: none"> • Stakeholder involvement • Available nuclear resources identified • Availability of local resources analysed • Ownership options and responsibilities considered • Security and safety analysed • Spent fuel and radioactive waste management strategies recognized • Legal nuclear framework established • Regulatory framework established • Human resource development strategy established • National industry established • Unique Member State requirements evaluated 	<ul style="list-style-type: none"> • Owner/operator organization designated • Public education and consultation programme continued • Adequate staff to prepare for and analyse bids available • Management system established • Staff training started • Safeguards regulations implemented • Preferred sites characterized • Site or sites for bid invitation selected • Preferred nuclear technologies determined • Bid evaluation criteria determined • Contracting strategy established • Fuel cycle strategy developed • • ... 	<ul style="list-style-type: none"> • Regulatory body to act independently • Regulatory body to maintain technical skills • Regulatory body to have management attitude to assure safety culture are in place • Regulatory body to continue on of education and national participation continued • Regulatory body to continue communication continued • Regulatory body to continue planning for waste disposal • Regulatory body to continue commissioning conducted • Regulatory body to continue evaluated and winning bid • Regulatory body to continue negotiated • Regulatory body to continue for first nuclear power plant • Regulatory body to continue g obtained • Regulatory body to continue e and construction licensing • Regulatory body to continue l • Regulatory body to continue on staff trained and licensed • Regulatory body to continue ing fuel supply contracted • Regulatory body to continue operational, training, • Regulatory body to continue ring and maintenance support • Regulatory body to continue ed • Regulatory body to continue pport for nuclear power plant • Regulatory body to continue n obtained

3. Management

Phase 2

Conditions

MAIN FEATURES

- Covers **Milestones 1 and 2**
- Can be carried out at any point to review progress
- Addresses **each** of the 19 infrastructure issues
- **For each condition**, identifies the **evidence** that will show it has been met
- Seeks to **avoid duplication** as much as possible

3. Management		Phase 2
Conditions	• Basis for evaluation	
3.1 BIS available	• Documented bid invitation specification (BIS) available.*	
3.2 Adequate staff available to prepare for and analyse bids.	• Description of organization, including roles and responsibilities of departments and individuals with respect to understanding of the project and the requirements of the project, as well as financial, legal, technical and commercial aspects.	
3.3 Bid evaluation criteria defined.	• Evidence that staff are available to understand the project and the requirements of the project, as well as financial, legal, technical and commercial aspects.	
3.4 Contracting strategy established.	• Clear description of how bid will be evaluated. Evidence that criteria include any country specific requirements, safety and security aspects, the complete fuel cycle requirements, as well as financial, legal, technical and commercial aspects.	
3.5 Project management organization established.	• Document that the chosen strategy is consistent with the project requirements and that the necessary arrangements are in place.	
3.3 Management systems established.	• Justification of adequate staffing (numbers, skills, experience).	
	• Roles and responsibilities within the organization clearly defined, particularly with respect to control of work and acceptance.	
	• Project reporting mechanisms defined.	
	• Acceptance procedures and criteria defined.	
	• Plans to acquire/develop required commissioning skills.	
	• Interfaces with other organizations defined and agreed on	
3.3 Management systems established.	• All participating organizations (including the regulatory bodies) established and have documented management systems which promote strong safety safeguards and security culture. Management systems are consistent with IAEA recommendations [10].	

* The documentation issued by the owner/operator to prospective suppliers of the nuclear power plant.

EVALUATION METHODOLOGY

The following elements should be contained in an Evaluation Report, as a minimum:

- Identification of the “Evaluators' Team” by position/role
- Identification of the “Team of Respondents”
- A description of the process used to conduct the evaluation
- Lists of the evidence reviewed and further actions required
- Summary of conclusions giving the status of achievement of each condition
- References to any relevant material used for conducting the evaluation
- Confidentiality requirements, **if any**

SELF-EVALUATION

MAIN STEPS FOR A COMPLETE SELF-ASSESSMENT

- **Organization and management**
 - Organizations involved / Responsibilities
 - Evaluators / Team
 - Methodology for evaluation / Actions
2. **Evaluate** the status of development of the infrastructure against the basis listed in the **Roadmap / White Paper / Milestone Document**
 3. **Identify** synergies between ALL Organizations involved
 4. **Identify** areas needing further attention
 5. **Preparing** an action plan to address these areas
- If needed, identify** IAEA / Multilateral / Bilateral supports

EVIDENCES

- Reports
- Meeting notes
- Correspondence
- Talks and presentations
- Meeting reports
- CVs, organization and job descriptions
- Etc.

WORK PROGRAMME

For each issue, there should be a clear work programme for the next phase showing:

- the objectives of the work programme
- the detailed activities
- who is responsible for each activity,
- the funding and resources required,
- how it will be provided
- the timescales for each activity.

EVALUATION STEPS

- Determine the scope and terms of reference.
 - strongly recommended that all 19 issues are covered
 - Identify the organizations to be involved
 - the individuals who will conduct the evaluation;
- Evaluate the status of the infrastructure against the basis listed
- Identify areas needing further attention
- Preparing an action plan to address these areas.

1 National Position

1.3 National strategy defined

Phase 1

Basis for Evaluation

Evidence

Actions Suggested

- 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.

1.3.1
1.3.2
1.3....

1.3....

EVALUATION:

Significant Actions Needed

Minor Actions Needed

No Actions Needed

And an overall conclusion:

Significant actions needed;

Minor actions needed

No actions needed

1 National Position	Phase 1
Condition	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 of intergovernmental 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 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	Significant Actions Needed

Status of nuclear infrastructure development

No.	INFRASTRUCTURE ISSUES	PHASE 1, STATUS
1.	National position	Red
2.	Nuclear Safety	Green
3.	Management	Red
4.	Funding and Financing	Yellow
5.	Legislative Framework	Yellow
6.	Safeguards	Green
7.	Regulatory Framework	Green
8.	Radiation protection	Green
9.	Electrical Grid	Green
10.	Human resources	Green
11.	Stakeholder involvement	Red
12.	Site and supporting facilities	Yellow
13.	Environmental protection	Green
14.	Emergency planning	Green
15.	Security	Green
16.	Nuclear fuel cycle	Green
17.	Radioactive waste	Green
18.	Industrial Involvement	Yellow
19.	Procurement	Green

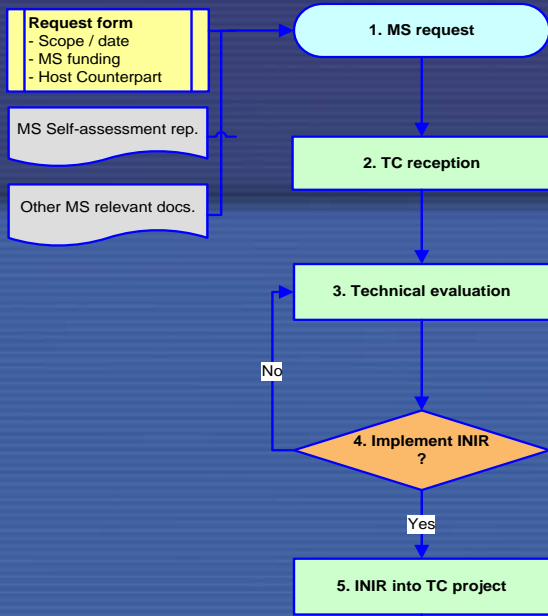
INIR PROCESS



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REQUEST & INITIAL ARRANGEMENTS



1. NLO
- Official transmission to IAEA

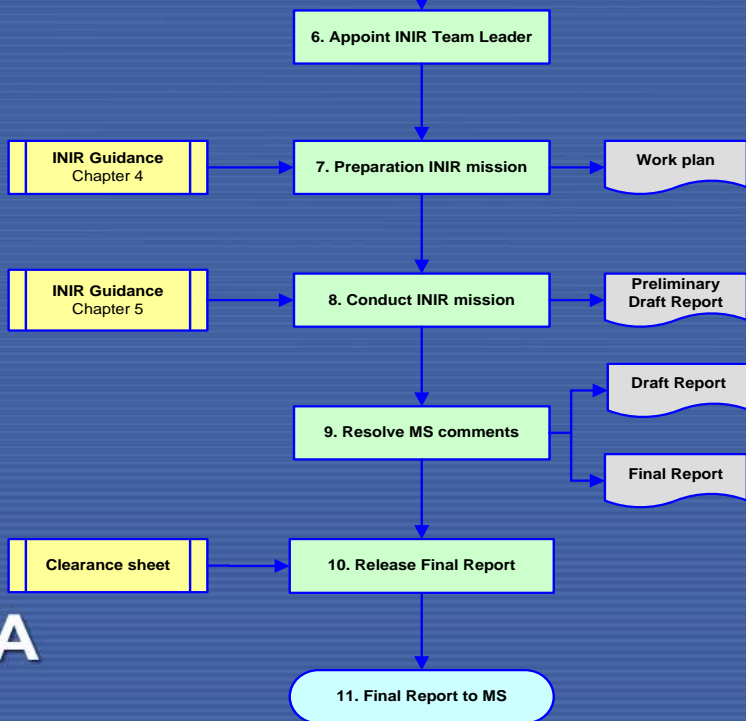
2. PMO
- Receives and reviews request
- Communicates to TO & INIG Leader
- Identifies resources availability

3. INIG Leader
- Reviews technical suitability
- Clarifies with Host Counterpart
- Request, if needed, more MS info / preparation
- Involves IAEA technical staff
- Coordinates with TO & PMO
- Makes recommendation

4. DIR-NENP
- Decides:
a) implementation, or
b) more MS info/preparation needed
- Informs NPSG

5. PMO & TO
- Incorporation into TC work plan
- Allocation resources

IMPLEMENTATION



6. INIG Leader
- Consults with relevant IAEA staff
- Proposes Team Leader
DIR-NENP
- Appoints INIR Team Leader

7. INIR Team Leader
- Preparatory meeting
- Specific scope
- Reference material
- Selection of Team Members
- Coordination with Host Counterpart
PMO & TO
- Recruitment external Team Members

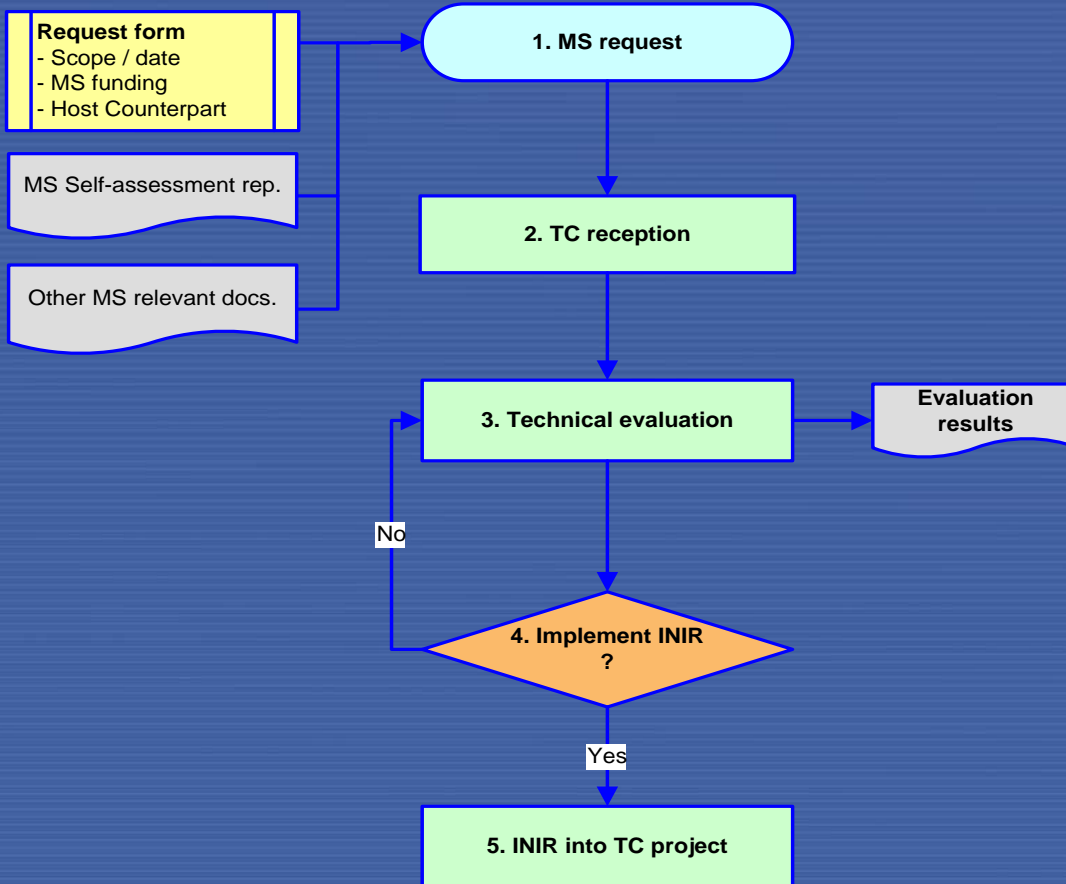
8. INIR Team Leader
- Conducts INIR Team
- Provides Preliminary Draft Report to Host Counterpart

9. INIR Team Leader
- Sends draft report to Host Counterpart
- Solves MS comments
- Delivers Final INIR Report to INIG Leader

10. INIG Leader
- Distributes INIR report to TO, PMO & relevant IAEA staff
- Submits to NPSG if mission before invitation of bid
- Submits to DDG-NE for formal delivery

11. DDG – NE
- Formal delivery to MS

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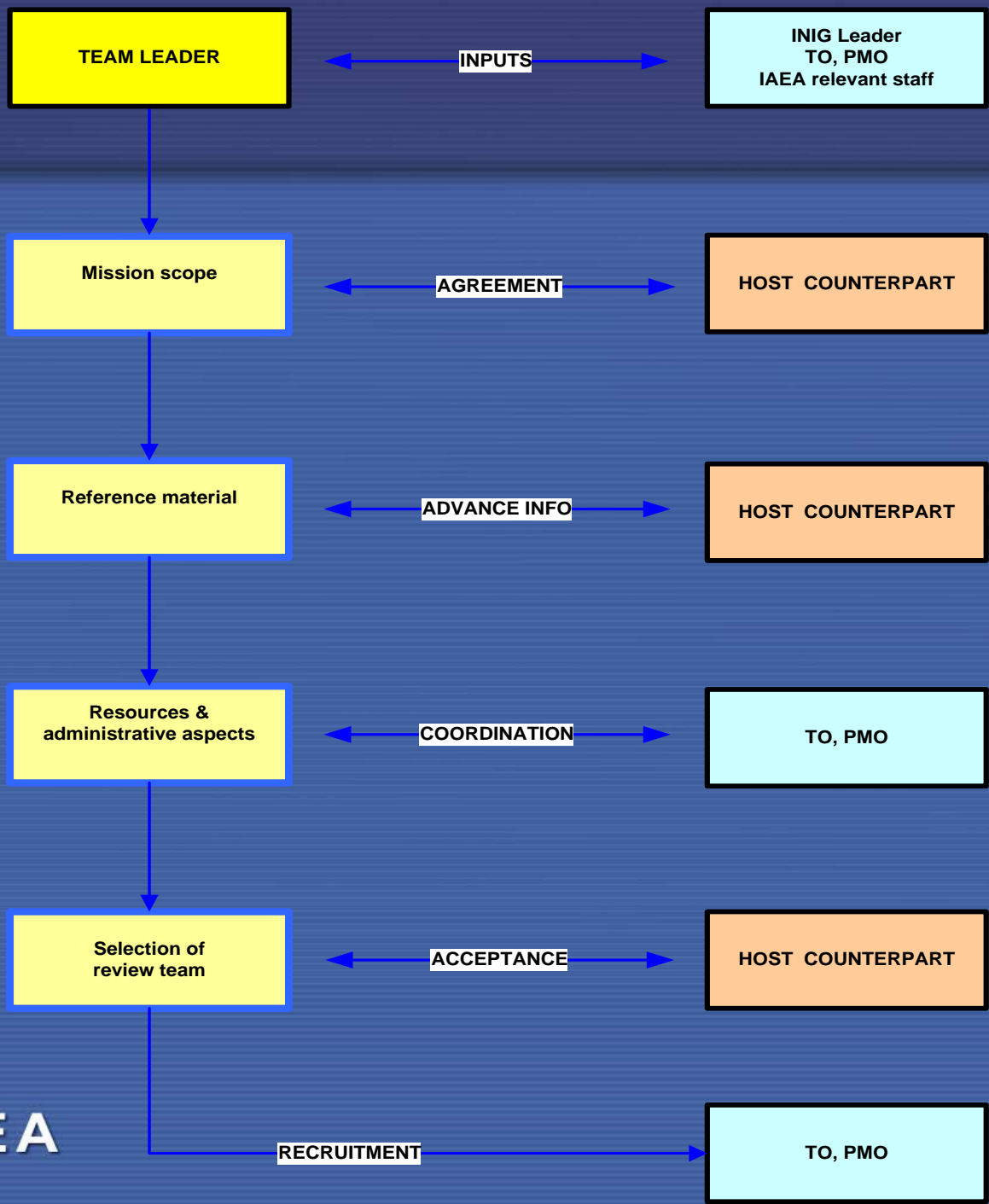
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TEAM LEADER

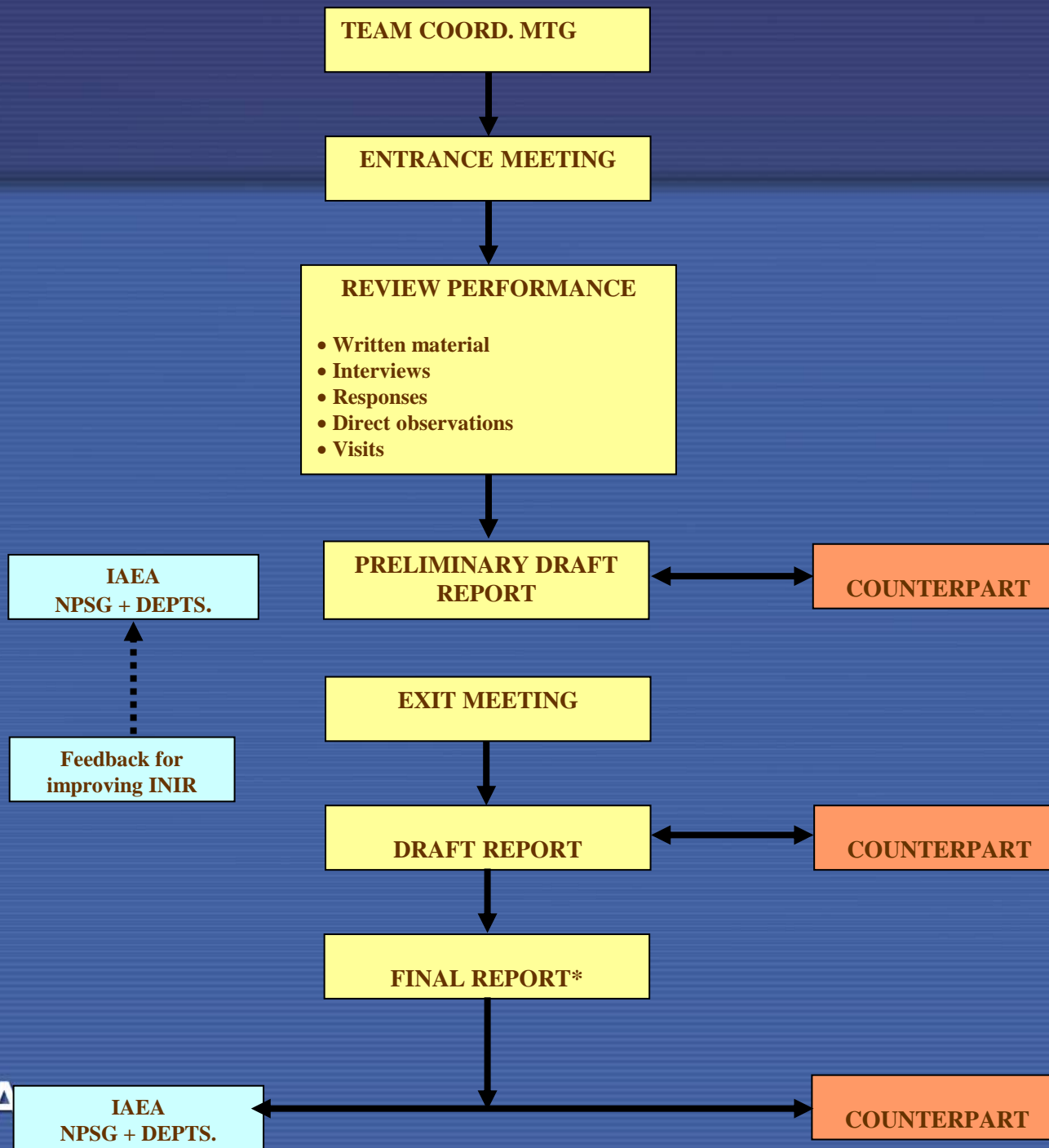
- General coordination: tasks, dates, work plan
- Arrange / agree on supporting facilities
- Interface & communication with:
 - INIG Leader
 - TO
 - PMO
 - Team Members
 - Relevant IAEA staff
 - Host Counterpart

TEAM MEMBERS

- Familiarize with evaluation approach and expectations
- Review general and specific mission material
- Travel arrangements: visa, immunization, security training, and flight

HOST COUNTERPART

- Provide advance information in English
- Nominate: interacting host personnel local Observers
- Make logistic arrangements



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...atoms for peace.