**Modular Approach to Developing Framework for Agency OpE Program**

The Reactor Operating Experience (OpE) Task Force made 24 recommendations to improve the agency's OpE program. For purposes of implementation, the 24 recommendations have been binned into four modules. The four modules are the Clearinghouse Module, the Effectiveness Assessment Module, the Information Technology/Knowledge Transfer Module, and the Management Directive/Handbook Module. Together, the modules will address 21 of the 24 recommendations.[1]

A graphical representation of the modular approach is provided in Figure 1.

All four modules will be worked in parallel. Upon completion of the Clearinghouse, Effectiveness Assessment, and Information Technology/Knowledge Transfer Modules, they will be folded into the Management Directive/Handbook Module, which will then be the framework for the OpE program.

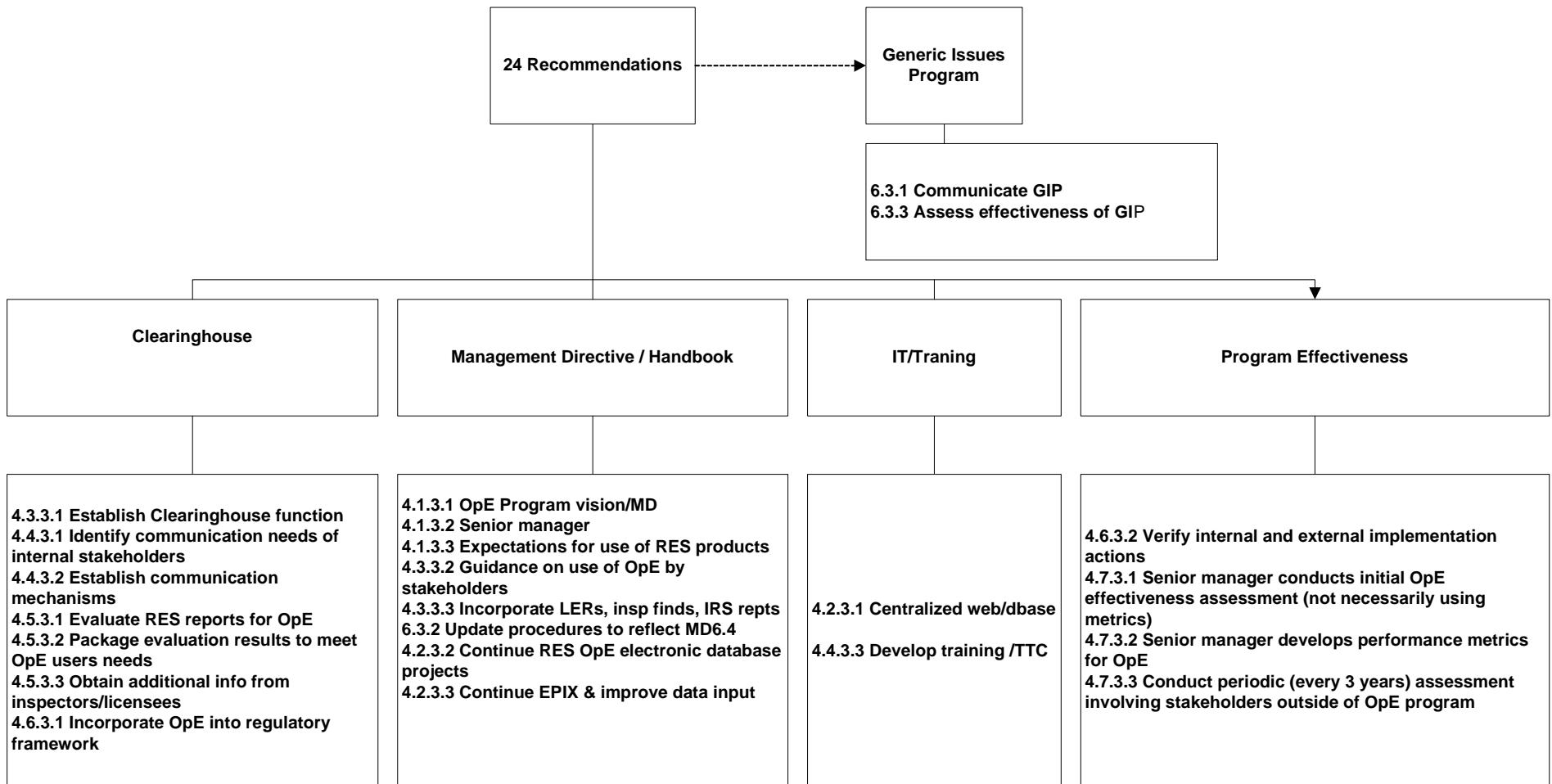The general approach for developing the modules has the following steps:

• Define the functional requirements for each module.
• Develop Implementation Team tasks needed to construct the module.
• Estimate and secure resources required to complete tasks for each module.
• Perform module construction tasks.

We have finished the first three steps for each module. This work is discussed in the following pages. The discussion of each module consists of (1) a general description of the module and the specific recommendations that will be addressed by the module, (2) the functional requirements for each modules (the functions to be performed after the necessary infrastructure, processes, and/or other tools have been developed), (3) the tasks necessary for the implementation team to construct the module infrastructure, etc. (Note: the proposed tasks are general; thus, detailed tasks need to be identified for developing the implementation beyond the framework), and (4) the estimated resources.

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[1]Of the three remaining recommendations, two relate to the RES Generic Issues Program and can be performed by the line organization in RES. The specific recommendations are 6.3.1 and 6.3.3 of Attachment 1. The third recommendation relates to the adequacy of NRC requirements governing the use of OpE and requires no action (Recommendation 5.3 of Attachment 1).

(Figure 1)

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│ 24 Recommendations  │ - - - - - - - - - - - ►  │ Generic Issues      │
│                     │                          │ Program             │
└─────────────────────┘                          └─────────────────────┘
                                                          │
                                          ┌─────────────────────────────┐
                                          │ 6.3.1 Communicate GIP        │
                                          │ 6.3.3 Assess effectiveness   │
                                          │       of GIP                 │
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| Clearinghouse | Management Directive / Handbook | IT/Traning | Program Effectiveness |
|---|---|---|---|
| **4.3.3.1 Establish Clearinghouse function**<br>**4.4.3.1 Identify communication needs of internal stakeholders**<br>**4.4.3.2 Establish communication mechanisms**<br>**4.5.3.1 Evaluate RES reports for OpE**<br>**4.5.3.2 Package evaluation results to meet OpE users needs**<br>**4.5.3.3 Obtain additional info from inspectors/licensees**<br>**4.6.3.1 Incorporate OpE into regulatory framework** | **4.1.3.1 OpE Program vision/MD**<br>**4.1.3.2 Senior manager**<br>**4.1.3.3 Expectations for use of RES products**<br>**4.3.3.2 Guidance on use of OpE by stakeholders**<br>**4.3.3.3 Incorporate LERs, insp finds, IRS repts**<br>**6.3.2 Update procedures to reflect MD6.4**<br>**4.2.3.2 Continue RES OpE electronic database projects**<br>**4.2.3.3 Continue EPIX & improve data input** | **4.2.3.1 Centralized web/dbase**<br><br>**4.4.3.3 Develop training /TTC** | **4.6.3.2 Verify internal and external implementation actions**<br>**4.7.3.1 Senior manager conducts initial OpE effectiveness assessment (not necessarily using metrics)**<br>**4.7.3.2 Senior manager develops performance metrics for OpE**<br>**4.7.3.3 Conduct periodic (every 3 years) assessment involving stakeholders outside of OpE program** |

**Recommendation 5.3 was to evaluate requirements of licensee use of OpE. No action was required.**

# 1 Clearinghouse Module

## 1.1 General Description and OpE Task Force Recommendation Reference

The Clearinghouse Module is the core of the reactor OpE program model.  It serves as the central processing center for all OpE information.  Successful completion of the Clearinghouse Module (constructing and implementing the processes) will address the following Task Force recommendations:

| | |
|---|---|
| 4.3.3.1 | Establish an OpE information clearinghouse function within a single organization to: collect, screen, prioritize, and distribute OpE information to interested users; facilitate and track OpE decisions and followup; facilitate communication of OpE lessons learned; and coordinate overall NRC OpE activities. |
| 4.4.3.1 | The central clearinghouse should take the lead in identifying the communication needs of internal stakeholders for OpE.  These needs should address the user need for OpE information, the vehicle for communicating the information (including procedures that provide guidance on the type and format of information to be provided), and the responsibilities for communication.  Key internal stakeholders include the Commission and Advisory Committee on Reactor Safeguards, in addition to NRR, RES, and regional staff. |
| 4.4.3.2 | The central clearinghouse should take the lead in establishing routine and frequent communication mechanisms between the various OpE organizations (e.g., daily screening meetings, weekly coordination meetings, and monthly management briefings) to improve communication and coordination among the OpE activities. |
| 4.5.3.1 | Additional OpE evaluations should be performed to identify trends, recurring events, or safety issues for appropriate followup actions and to develop lessons learned to feed back to the regulatory programs and industry.  Foreign OpE should be appropriately considered and assessed as appropriate in OpE evaluations. |
| 4.5.3.2 | OpE evaluations should package the results to meet the needs of the information users.  The OpE information clearinghouse should play a key role in coordination OpE evaluations with the stakeholders. |
| 4.5.3.3 | The OpE clearinghouse should clarify the process of obtaining information from inspectors and licensees to support OpE evaluations; in some cases, this would include site visits for fact finding by evaluation. |
| 4.6.3.1 | Adopt systematic processes and standardized criteria that guide the agency's timely decisions for actions in response to OpE to assure that OpE insights and lessons learned are effectively incorporated into the regulatory framework including licensing and inspection.  Implementing procedures and guidance should be incorporated in the processes. |

1.2 Functional Requirements for the Clearinghouse

The Clearinghouse will perform the following functions once the infrastructure has been established and the Clearinghouse is ready for operation:

- Receive/Collect OpE information from various sources. Examples of these sources include: 50.72 reports (Event Notifications), 50.73 reports (Licensee Event Reports), inspection reports, Incident Reporting System (IRS) reports. Input also includes "feedback" from various staff studies.

- Ensure that relevant OpE information is stored in ways to make it available and easily retrievable.

- Screen new OpE information to determine if they warrant further evaluation.

- Disseminate screened-in OpE information that was deemed sufficiently significant for further evaluation to targeted (pre-designated) technical staff whose area of expertise is relevant to the subject OpE information.

- Provide project management function for OpE information being evaluated to ensure that the OpE information is properly and timely evaluated to provide a basis for deciding whether further action should be taken.

- Perform the project management role through the "decision" process and hand off to responsible staff once the course of action is decided. Some decisions may require continued project management or tracking until the final product is delivered (i.e., generic communications, inspection program management).

- Clearinghouse support function include:

  - Identify communication needs of users of OpE. These needs should address the user's need for OpE information, the vehicle for communicating the information, and the responsibilities for communication.

  - Establish mechanisms for routine and frequent communication among the various OpE organizations.

  - Play a key role in coordinating OpE evaluations with the stakeholders. Ensure that OpE evaluation results are packaged to meet the needs of the information users.

  - Clarify the process for obtaining OpE information from primary sources, i.e., inspectors and licensees, to support OpE evaluations.

  - Adopt systematic processes and standardized criteria for timely agency decisions on actions in response to OpE to assure that OpE insights and lessons learned are effectively incorporated into the regulatory framework, including licensing and inspection.

1.3 Tasks To Construct Clearinghouse Infrastructure

The following tasks need to be accomplished to establish the infrastructure of the Clearinghouse:

- Design model illustrating flow of information and decisionmaking.

- Clearly define roles and responsibilities for the various nodes on the model.

- Design work control system to assist in project managing and tracking operating experience flow through the model.

- Translate the above into draft MD Handbook and office level procedures.

1.4 Resource Estimate for Developing Framework for the Clearinghouse Module (by 12/04) -- 1 FTE


## 2   Management Directive/Handbook Module

2.1 General Description and OpE Task Force Recommendation Reference

The focus of this module is the development of a Management Directive for the agency's reactor OpE program and the accompanying Handbook.  Successful completion of the Management Directive/Handbook Module (developing the MD/Handbook) will address the following Task Force recommendations:

| 4.1.3.1 | The NRC should develop and communicate a clear vision of how the agency's OpE program activities should function together to meet the Commission's expectations for the use of OpE.  MD 8.5 should be updated to communicate this vision and the roles and responsibilities of the OpE activities.  Office level procedures should be updated to be consistent with MD 8.5. |
|---------|---|
| 4.1.3.2 | A senior manager should be assigned as a single point of contact to coordinate activities for the agency's reactor OpE program, including periodic assessments and program status reports. |
| 4.1.3.3 | The responsibilities and expectations need to be clarified for utilizing the lessons learned from evaluations of trended data, reliability studies, ASP studies, and generic reactor safety studies, including updating MD 8.5 and other appropriate procedures to explicitly include consideration of OpE |
| 4.2.3.2 | Continue the following ongoing initiatives to improve collection, storage, and retrieval of OpE data and information while coordinating with other closely related ongoing activities:  the Reactor Operating Experience Results and Database Web page, the Inspector Electronic Support System Web page, the Web-based LER Search System, the Integrated Data Collection and Coding System, the Reactor Operating Experience Information System, and the Web-based ASP database. |

| 4.2.3.3 | Continue to work with INPO and industry to improve the consistency of data entered into EPIX.  In addition, RES staff, industry, and INPO representatives should continue to work together through the EPIX Ad Hoc Working Group to ensure that EPIX benefits both the NRC and industry |
|---------|---|
| 4.3.3.2 | Develop guidance to inspectors, technical branches, and licensing personnel which provides clear expectations for identifying existing safety problems and provides better guidance on what the inspector should look for to identify existing safety problems based on OpE feedback. |
| 4.3.3.3 | Formally incorporate the review of LERs, inspection findings, and IRS reports as input to the routine OpE screening process. |
| 6.3.1 | RES and NRR should update their procedures to reflect the issuance of MD 6.4. |

2.2 Functional Requirements of the MD / Handbook

The MD/Handbook will perform the following functions once its final version is published and becomes effective:

- Communicate the vision of OpE activities.  Define the OpE objectives and attributes.

- Document the infrastructure and process flow model of the OpE program.

- Establish and identify the OpE program manager function.

- Define organizational roles and responsibilities for all entities involved in the OpE program.

- Establish coordination activities with internal and external stakeholders (i.e., INPO)

2.3 Tasks To Draft MD / Handbook

- Develop a draft MD and Handbook incorporating the functional requirements pertaining to the MD Module.

- Incorporate OpE program vision in the MD Policy Statement section.

- Incorporate OpE program objectives and attributes in the Objective section of the MD.

- Incorporate the program/process/model developed for the Clearinghouse Module in the MD.

- Incorporate the program/process/model developed for the IT Module in the MD.

- Incorporate the program/process/model developed for the Effectiveness Assessment Module in the MD.

- Address Task Force Recommendations 4.1.3.3, 4.3.3.2 (clearly define expectations).

- Estimate and secure resources needed to develop MD Module.

- Gain the acceptance of interfacing internal stakeholders regarding their roles and responsibilities and obtain their cooperation.

- Verify that the 21 Task Force Recommendations have been adopted in the MD/Handbook.

2.4 Resource Estimate for Developing Framework for the MD / Handbook Module (by 12/04) -- 1 FTE


## 3    Information Technology/Training Module

3.1 General Description and OpE Task Force Recommendation Reference

The IT/Training Module has two objectives: use IT to build effective communication tools for OpE program functions, and to develop a training tool or a program to transfer OpE knowledge within the agency.  The IT/Training Module (building the communication and training infrastructures) will address the following Task Force recommendations:

| 4.2.3.1 | As recommended in Section 4.3, a central clearinghouse function should be established to: (a) Create and maintain an NRC OpE data and information Web site; (b) Develop processes to catalog and make available current databases and document collections of OpE data and information, collect and store important OpE e-mails, collect and store foreign OpE not reported in IRS; and (c) Coordinate efforts with the Office of the Chief Information Officer to improve search routines and improve the categorization of OpE documents in ADAMS. |
|---|---|
| 4.4.3.3 | The OpE review results, insights, and lessons learned should be better used to support the agency's knowledge transfer and training.  The central clearinghouse should work with the Technical Training Center and other program offices to develop specific ways to use OpE information for that purpose. |

3.2 Functional Requirements of IT/Training

3.2.1   Functional Requirements for IT

Following are the functional requirements for the IT portion of this module:

- A Clearinghouse Web site to serve as the portal for agencywide access to OpE information. Currently available information systems are:

  - Reactor Operating Experience Results and Database Web (RES)
  - Web-based LER Search system (RES)
  - Reactor Operating Experience Database
  - Reactor Operating Experience Web Page (NRR)
  - Inspector Electronic Support System Web Page (NRR)
  - Reactor Oversight Process Plant Performance Summary/Inspection Findings (NRR)

- Data systems to provide user-friendly retrieval capabilities for a wide range of users.

- Improve categorization and retrievability of OpE information in ADAMS.

- Establish policy and protocol for storage of OpE-related photographs.

- Effective collection, storage, and cataloguing of OpE information.

- Effective communication tools for dissemination of OpE.

- Improved capture and retention of foreign OpE.

- In conjunction with TTC, develop training to better use OpE results, insights, and lessons learned to support agency knowledge transfer.

3.2.2   Functional Requirements for Knowledge Transfer:

The following functional requirement pertains to the knowledge transfer aspect of this module:

- Better use of OE results, insights, and lessons learned to support agency's knowledge transfer and training.

3.3 Tasks To Construct IT/Training Infrastructure

3.3.1   Tasks to Construct IT Infrastructure

The following tasks need to be accomplished to provide the IT infrastructure needed to enhance Op- related communication:

- Clearly and comprehensively identify all current OpE information sources and tools

- Present current sources, tools, and functional requirements to OCIO.

- Seek OCIO assistance in developing business solution - and in completing the CPIC screening form.

- Develop a comprehensive and integrated model.

- Seek consensus on model.

- Develop and test prototype.

- Roll out.

- Conduct training/Marketing

- Receive feedback.

- Act on feedback.

- Put into production.

- Incorporate into draft MD/Handbook.

3.3.2   Training/Knowledge Transfer

The following tasks need to be accomplished to construct the knowledge transfer infrastructure:

- Engage TTC and other program offices and develop approach to efficiently and effectively transfer insights and lessons learned from OpE.

- Incorporate into draft MD/Handbook.

3.4 Resource Estimate for Developing Framework for the IT/Knowledge Transfer Module (by 12/04) -- 1 FTE

## 4   Effectiveness Assessment Module

The Effectiveness Assessment Module pertains to developing processes to assess the effectiveness of the OpE program.  Successfully developing these processes will address the following Task Force recommendations:

| 4.6.3.2 | Improve the process for follow-up of OpE that verifies adequate resolution of the issues of concern including effective implementation of internal and external actions stemming from OpE insights and lessons learned.  Implementing procedures and guidance should be incorporated in the processes. |
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| 4.7.3.1 | The designated single point of contact (Recommendation 4.1.3.2) should conduct an assessment of the initial implementation of the OpE task force recommendations which are selected by NRC management for implementation approximately one year following initial implementation. |
| 4.7.3.2 | The designated single point of contact should develop and collect appropriate OpE program effectiveness measures and metrics, with links to the performance goals in the NRC strategic plan and the attributes of the OpE program. |
| 4.7.3.3 | Thereafter, periodic assessment (approximately every 3 years) should be conducted.  This assessment should involve stakeholders external to the OpE program and reported in a paper to the Commission. |

4.1 Functional Requirements of the Effectiveness Assessment Module

A sound program to assess the effectiveness of the OpE program should perform the following functions:

- Define proceduralized processes to verify adequate resolution of internal and external OpE issues and concerns.

- Provide program effectiveness assessment measures and metrics with links to performance goals in NRC strategic plan and attributes of the OpE program.

- Metrics incorporated into NRR/RES operating plans.

- Assessment after 1 year of implementation.

- Triennial assessment reported to Commission.

4.2 Tasks To Accomplish Effectiveness Assessment Module

4.2.1   Tasks for Developing Metrics

The following tasks need to be accomplished to develop metrics for assessing effectiveness:

- Assign dedicated individual as lead.

- Obtain understanding of purpose of program.

- Provide training or obtain expertise in performance measures.

- Develop proposed metrics.

- Obtain consensus.

- Incorporate into the draft MD/Handbook.

4.2.2   Tasks for Assessing External Effectiveness.

- Develop program for verifying that generic communications accomplish their intent.

- Verify effective implementation of actions.

4.3 Resource Estimate for Developing Framework for the Effectiveness Assessment Module (by 12/04) -- 1 FTE.