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NRC Operating Experience (OpE) Overview

John Lubinski
Deputy Division Director for Component Integrity
Office of Nuclear Reactor Regulation
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NRC Operating Experience (OpE) Program Overview

- Objectives
- Stakeholders
- Processes
- Products
- Web Page/Communication
- New Initiatives
- Examples of OpE Issues

NRC OpE Program Objectives

- OpE is collected, evaluated, communicated, and applied to support the NRC's goal of ensuring safety
- OpE is used to improve the effectiveness, efficiency, and realism of NRC decisions
- *Stakeholders* are provided with timely, accurate, and balanced information

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Who are NRC Stakeholders?

- Internal – NRC and Staff
- General Public
- Licensees
- Industry and Owner's Groups
- International Regulatory Agencies

Reactor OpE Review Process

- Centralized screening organization
- Various sources of OpE collected
- Screening of domestic and international OpE in accordance with established guidelines
- Evaluation of screened-in items by review team and technical staff
- Communication with stakeholders
- Analysis/trending of OpE
- Application of OpE lessons learned

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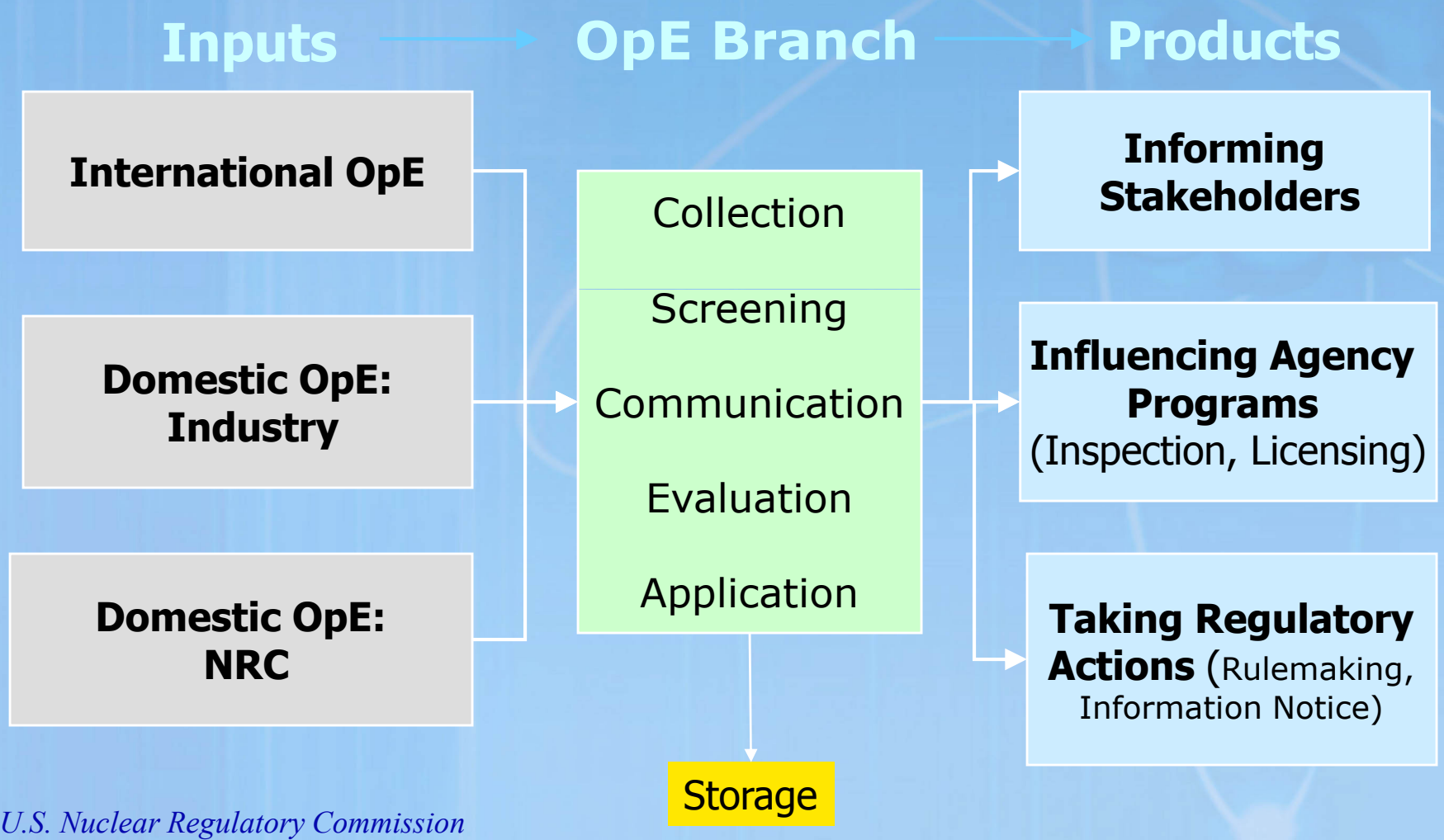
NRC OpE Program Overview



International OpE Input

- International Nuclear Event Scale (INES)
  - All Event Notifications rated with INES
  - Level 2 or higher is communicated internationally
- Incident Reporting System (IRS)
  - Relevant Generic Communications submitted to IRS
  - IRS reports are screened by NRC's OpE review team
  - 15 U.S. reports submitted in FY2008
  - World Association of Nuclear Operators (WANO) reports via the Institute for Nuclear Power Operations (INPO)
- Other international event data as we get it

International OpE Activities

- Facilitate internal/domestic use of International OpE
  - Continued Screening of international reports
  - Continue to issue COMMunications on International Events
- Share U.S. OpE w/ International community
- Coordinate initial response and communication of International Events within the NRC

Domestic OpE: NRC Input

- NRC Inspection Findings
- Morning Reports
- Preliminary Notifications
- Regional Project Calls
- Studies/Trends

Domestic OpE: Industry Input

- Event Notification Reports (10 CFR 50.72)*
- Licensee Event Reports (10 CFR 50.73)*
- Plant Status Reports*
- Defect or Non-Compliance Reports (10 CFR 21)*
- INPO Reports

* = Publicly Available on the NRC Web Page

http://www.nrc.gov/reading-rm/doc-collections/#event

OpE Review Team

- Collect OpE Data
- Screen OpE Data against established criteria
  - Safety Significance (CCDP > 1E-06)
  - Generic Applicability
- Generate an Issue for Resolution (IFR) for every "screened-in" item.
- IFR's require a technical evaluation for closure and may generate OpE Applications.

Daily OpE Functions

- Morning Executive Team (ET) Brief
  - Discuss new events
  - Update ongoing plant issues
  - International events
  - Follow up on ET information requests
- Daily Regional Conference Calls
- Daily Screening Meeting
  - Team reviews OpE from all sources.
  - Team makes screening decision on each issue
  - “Screening Summary” email issued daily

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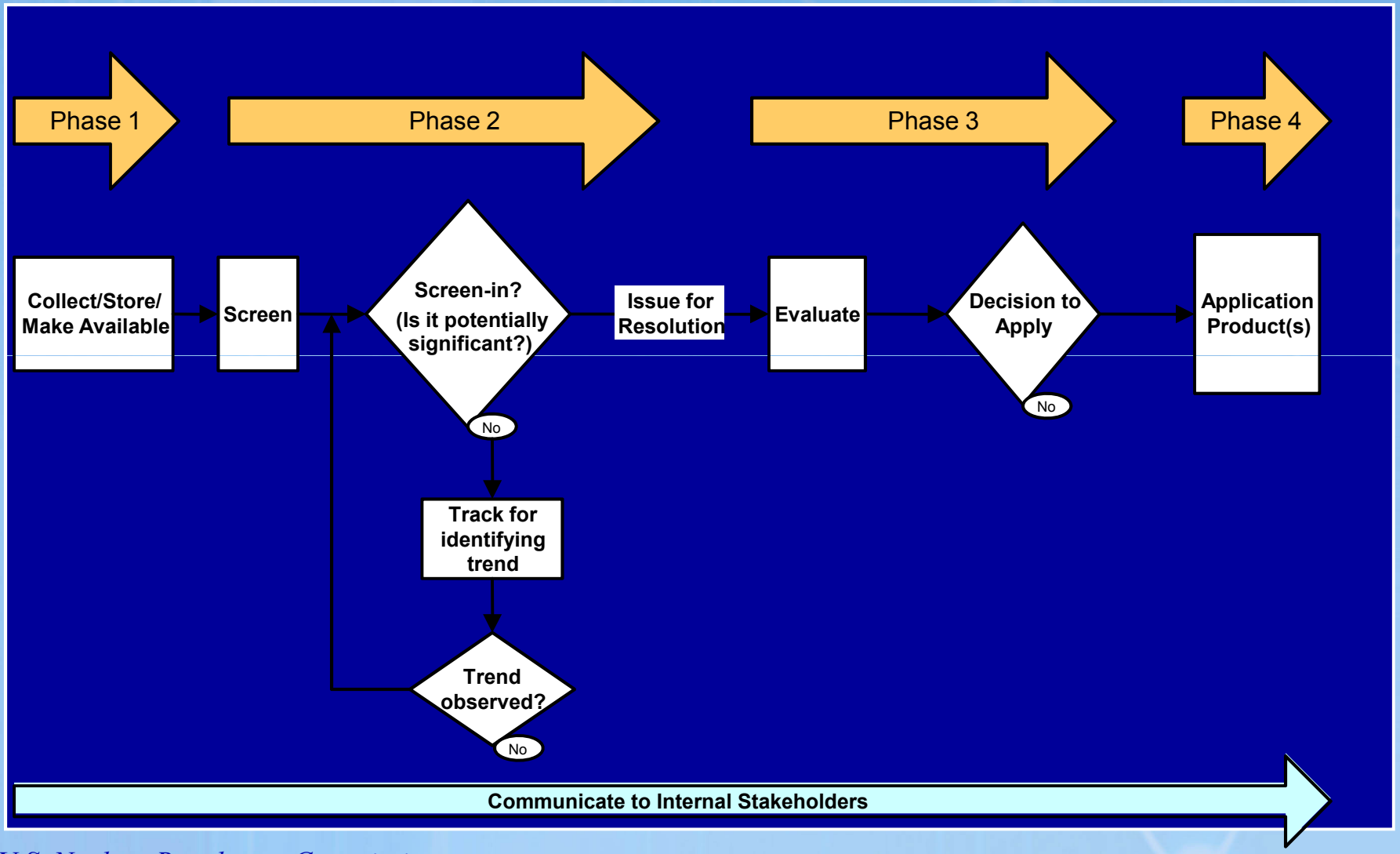
Issue for Resolution - Process Flow



Issue for Resolution Output: (OpE Applications)

- Generic Communication (http://www.nrc.gov/reading-rm/doc-collections/gen-comm/index.html)
- Management Briefings
- OpE COMMunications (COMMS)
- Inspection Manual Change Request
- OpE Smart Samples (OpESS) (http://www.nrc.gov/reactors/operating/ops-experience/operating-experience-smart-sample.html)

Management Briefings - FY08

- Fuels Operating Experience and Areva M5 Assembly Growth
- Transformer Failures – Recent Operating Experience
- Review of Feedwater Related Events: Analysis and Trends
- Forsmark Lessons Learned
- Passive Component Degradation

OpE COMMunication

- Internal discussion forum to share timely OpE within the Agency (OpE Community).
- OpE COMMunications (COMMs) are posted to appropriate discussion groups in order to rapidly distribute current OpE to internal stakeholders
- The OpE Branch posted 84 COMMs to the OpE Community in 2008, 12 of which addressed international events

OpE Smart Sample Program

- The OpESS program is designed to integrate OpE within the inspection program.
- OpE Smart Samples provide information that inspectors may review while conducting inspections.
- OpESS topics are selected based on potential generic applicability and risk significance
- OpESS are published to the NRC public web page

Information Technology Tools

- OpE Information Gateway
  - Single web access point to multiple databases
  - Dataset assumptions and limitations explained
  - Improved OpE search capabilities
- @Operating Experience Community
  - Web-based NRC internal COMMunication forum
  - Subscription notification to over 30 topical areas
  - Provides links to related documents
  - Searchable records

Technical Review Groups (TRG)

- Agency-wide initiative to supplement review team screening
  - Review team processes over 3000 items annually
  - Technical experts have more specific knowledge
  - Identify additional issues
- 24 TRGs cover various technical areas
- Groups consisted of: Pumps & Valves, Fuel, Electrical, Piping, New Reactors, etc

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TRG Output

- TRG reviews OpE in their area over the last year
- 2008 results:
  - 10 Generic Communications published
  - 2 Vendor Inspections
  - 2 Inspection Procedure updates

OpE Relationships

- Internal:
  - NRC Office of Research – Attends review meetings, reviews LERs/etc for ASP program. User needs memos.
  - NRC New Reactors Office – Attends review meetings, evaluates OpE for applicability, NRO TRG.
  - Regions/Inspection Branch –Inspection preparations, regional coordinators, outreach, Reactive Inspections, OPESS, daily regional calls, OpE searches.
  - TRG – Periodic program briefs, yearly report.
- External:
  - Working Group on Operational Experience (WGOE), Committee on Nuclear Regulatory Activities) CNRA, International Atomic Energy Agency (IAEA), North American Electric Reliability Corporation (NERC), Federal Energy Regulatory Commission (FERC), Institute of Nuclear Power Operations (INPO)

INPO Relationship

- OpE Liaison with INPO Events Analysis staff
  - Bi-weekly teleconference to compare latest OpE trends/activities/publications
  - Annual visits to discuss programs/policy
  - Value added:
    - Easy access to discuss emerging OpE topics
    - Better access to SEE-IN documents (fully updated database)
    - Sharing of best practices/program development

OpE Analysis Team

- Longer-Term analysis of significant OpE
- Works with review team and RES to identify significant trends in OpE
- Manages Reactor Operating Experience (ROE) database and ORNL contracts
- Handles Part 21 Reports and OPESS program.

New Initiatives

- OpE Analysis Report (OAR)
  - The “10,000-foot” view
  - Use Analysis Team to:
    - Trend issues
    - Connect the dots
  - Charting techniques reveal event clusters
  - As areas needing focus become evident, OpE schedules a briefing of NRR Director
  - Result can be informative, or action (i.e., use of NRR resources to further address the issue)

New Initiatives (cont'd)

- Issue Tracking Database
  - Tools are in place for capturing higher level issues
  - Currently, day to day low level OpE captured only in emails
  - Ability to search through issues is important for recall and for establishing trends.
  - Issue Tracking Database will automate some of the review team functions and establish a more systematic process.

International Event Response

- OpE staff gathers information on significant international events using a variety of sources.
- Depending on similarity of the affected plant to U.S. designs, NRC may “screen in” the event under the OpE process.
- Following 3 slides show recent international events and OpE response to each.

Identifying Significant OpE Issues

- OpE staff periodically meets to take a look at recent trends.
- Multiple events in a given technical area may reveal short-term trends.
- Searches of agency records determine past actions.
- When a trend is noted, OpE staff ensures management is aware, and recommends potential actions to address the issue.

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Summary

- The NRC collects domestic and international OpE data acquired from multiple sources.
- The NRC Screens, Evaluates and Trends OpE.
- The NRC communicates significant OpE to internal and external Stakeholders.
- The NRC screens International events for applicability to U.S. commercial reactors.
- The NRC works with Industry to share relevant Operating Experience.

References http://www.nrc.gov/reading-rm/adams.html

- Management Directive 8.7 (ML043570013)
- MD 8.7 Handbook (ML043570032)
- NRR Office Instruction LIC-401 (ML070320775)
- Reactor Operating Experience Task Force Report (ML033350063)
- Plan for Implementing Reactor Operating Experience Task Force Report (ML041180024)