

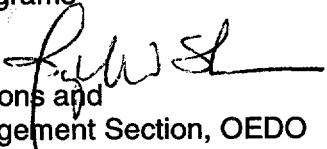


UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 26, 2001

MEMORANDUM TO: Frank J. Miraglia, Jr.  
Deputy Executive Director  
for Reactor Programs

FROM: Joseph W. Shea   
Regional Operations and  
Program Management Section, OEDO

SUBJECT: SUMMARY OF NOVEMBER 13, 2000, PUBLIC MEETING WITH THE  
INSTITUTE OF NUCLEAR POWER OPERATIONS

On November 13, 2000, senior managers of the Institute of Nuclear Power Operations (INPO) met with senior managers of the Nuclear Regulatory Commission (NRC) at NRC's headquarters offices in Rockville, Maryland. The purpose of the meeting was to provide an opportunity for the senior managers of both organizations to discuss items of mutual interest. Attachment 1 is the meeting agenda. Attachment 2 is a list of meeting attendees. The meeting is summarized below.

William Travers, NRC Executive Director for Operations, and Jim Rhodes, President And Chief Executive Officer of INPO opened the meeting with welcoming remarks which acknowledged the value of periodic public meetings in ensuring a current and common understanding of NRC and INPO activities and issues.

Following the opening remarks, Gary Leidich, Executive Vice President of INPO, led a presentation regarding changes in the environment in which its member nuclear utilities operated, including changes in the competitive and regulatory environments. INPO acknowledged that it was examining its own activities in light of such changes and described its operational model by which it evaluates and assists member utilities in achieving improvements in various functional areas. INPO described several recent changes in its approach including, for example, assignment of a dedicated INPO representative for each facility. Additionally, INPO has developed lessons learned with regard to utility consolidation and shared this information with its members. Bill Webster, INPO Vice President, discussed changes to the plant evaluation process by which INPO identifies current plant performance and trends in plant performance. Recent changes in this regard include the assignment of Evaluation Team Managers of increased seniority and experience and the simultaneous scheduling of evaluation team and accreditation team visits. Materials distributed by INPO in support of this portion of the meeting are included as Attachment 3.

In the next segment, Fred Tollison, INPO Executive Vice President, provided an update on INPO efforts to develop a consolidated set of data elements for member utilities to provide to

various stakeholders. Currently, INPO members provide routine reports to NRC (under the Reactor Oversight Program and in the form of monthly operating reports), the World Association of Nuclear Operators (WANO) and the industry Equipment Performance Information Exchange (EPIX). These reports require the utility to develop about 650 data elements and provide them in various combinations in the required reports. INPO described its plans to improve the efficiency of this process while ensuring that all utility stakeholders (including NRC) received the required information. INPO's handout for this portion of the meeting is included attachment 4.

Following these discussions, NRC staff made two presentations regarding the Reactor Oversight Program(ROP). In the first, Bill Dean, Chief, Inspection Program Branch, NRR discussed the status of the initial nationwide implementation of the NRC's revised ROP. He highlighted the various mechanisms the staff has implemented to obtain feedback from stakeholders of the ROP program including from licensees, the public, and NRC inspection staff. Mr. Dean identified key program issues which have been highlighted during the first seven months of implementation and discussed specific future activities regarding self-assessment and further development of the ROP. Subsequently, Ken Karwoski, Division of Engineering, NRR discussed the scope and depth to which steam generator issues are treated under the ROP. Mr. Karwoski also discussed the status of the broader treatment of steam generator issues as part of the NRC's November 2000 steam generator action plan. Materials used by the staff in this portion of the meeting are included as Attachment 5.

Sig Berg, Executive Vice President of INPO, discussed ongoing efforts by INPO to improve its training accreditation program. Mr. Berg indicated that, in response to an increase in probationary status being assigned to various elements of utility training programs, INPO had assembled a task force to further understand the trend. Through a review of accreditation reports and interviews, the task force identified several potentially contributing themes including:

- (1) Training not always being perceived as part of core utility business;
- (2) Less than full engagement of senior utility management in training matters;
- (3) Lack of understanding in utility workforce of relationship between training and improved performance;
- (4) Lack of understanding of how to manage a good training program; and
- (5) A reflection of training issues into other plant functional areas.

INPO further identified some contributing causes and discussed measures it planned to undertake to assist its members in improving training programs. Mr. Berg completed this portion of the meeting with an update on INPO efforts to assist in the development of sharing of training activities between its members.

In the final topic, the NRC staff presented the status of its ongoing review of industry implementation of work hour limits for personnel performing safety related activities. The staff is developing a recommendation to the Commission in response to petition for rulemaking PRM 26-2. The staff expects to provide its recommendations to the Commission in the near future. The staff presented information it has analyzed with respect to industry controls on overtime

usage at nuclear plants. The staff identified specific issues of concern which it expects to address in its recommendations to the Commission. Further information on the staff's analysis and concerns are presented in Attachment 6. The staff noted that industry initiatives in this regard could expand the options which could be recommended to the Commission in this matter.

The staff and INPO subsequently closed the meeting with expressions of thanks and agreed to continue to pursue periodic meetings between senior managers.

Attachments: As stated

usage at nuclear plants. The staff identified specific issues of concern which it expects to address in its recommendations to the Commission. Further information on the staff's analysis and concerns are presented in Attachment 6. The staff noted that industry initiatives in this regard could expand the options which could be recommended to the Commission in this matter.

The staff and INPO subsequently closed the meeting with expressions of thanks and agreed to continue to pursue periodic meetings between senior managers.

Attachments: As stated

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- Central Files
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- SCollins
- WTravers
- FMiraglia
- CPaperiello
- PNorry
- JCraig
- Attendees

See previous concurrence

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NRC/INPO Senior Management MeetingNovember 13, 2000AGENDA

Time Alloted	Topic	Presenting Organization	NRC Lead/INPO Lead
10 Minutes/Start 10:00	Introductory Remarks	INPO/NRC	W Travers - NRC Jim Rhodes - INPO
30 Minutes	Changes in INPO Evaluation Programs In Today's Changing Business Environment	INPO	G. Leidich - INPO
25 Minute	Consolidated Data Reporting	INPO	F. Tollison - INPO
30 Minutes	Revised Reactor Oversight Process -Results to Date	NRC	W. Dean - NRC
25 Minutes	Steam Generator Issues Under the ROP - Indian Point 2 Experience	NRC	Dean/Strosnider - NRC
35 Minutes	Lunch		
30 Minutes	INPO Initiatives to Improve Industry Training Including: (1) Accreditation, Probations of Plants (2) Operator Exam Question Bank Status	INPO	S Berg - INPO
15 Minutes	Shared Common Industry Training	INPO	S Berg - INPO
25 Minutes	Overtime for Licensed/Non-licensed staff performing critical functions- status of activities	NRC	B Boger - NRC
End by 2:00 pm			

NRC/INPO SENIOR MANAGEMENT MEETING  
LIST OF ATTENDEES  
November 13, 2000

<u>NAME</u>	<u>ORGANIZATION</u>
Bill Travers	NRC
Frank Miraglia	NRC
Carl Paperiello	NRC
Patricia Norry	NRC
Roy Zimmerman	NRC
Joe Shea	NRC
Bill Ruland	NRC
Ken Karwoski	NRC
Thomas Koshy	NRC
Jon Johnson	NRC
William Dean	NRC
Bruce Boger	NRC
Steve Burns	NRC
Bill Borchardt	NRC
Glenn Tracy	NRC
Mark Peifer	INPO
Jim Rhodes	INPO
Steve Johnson	INPO
Gary Leidich	INPO
Fred Tollison	INPO
Sig Berg	INPO
Bill Webster	INPO
Phil McCullough	INPO
Leslie Collins	Westinghouse

# ***INPO's Role***

*in today's  
CHANGING  
regulatory  
environment*

**INPO**

*Institute of  
Nuclear Power  
Operations*

*Suite 100  
700 Galleria Parkway, SE  
Atlanta, GA 30339-5957  
770-644-8000  
FAX 770-644-8549*



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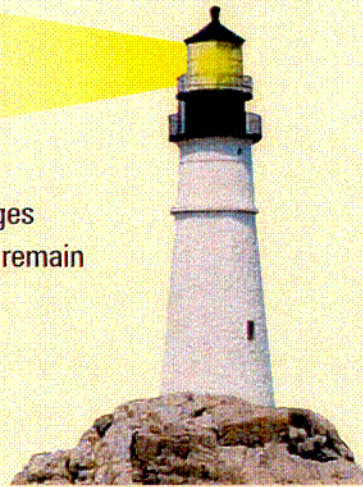
# INPO's Role in Today's Changing Regulatory Environment

## ***INPO's Mission***

*To promote the highest levels of safety and reliability — to promote excellence — in the operation of nuclear electric generating plants.*

Over the years, the nuclear power industry has undertaken significant improvement efforts and achieved an unparalleled safety and performance record. As industry change accelerates and new challenges emerge, the industry's safety emphasis must remain the top priority.

For this reason, INPO's commitment to its fundamental mission is unchanged. In many respects, INPO can be considered a "beacon of stability in a sea of change."



## ***Complementary Roles***

One important change involves the Nuclear Regulatory Commission's revised reactor oversight process. The change highlights the distinction between the fundamental role of the NRC – public health and safety – and INPO – operational excellence. This distinction, however, underscores the long-standing complementary nature of these roles. Achieving high levels of regulatory performance is a prerequisite for, but will not assure, operational excellence.

## ***Desired Outcomes of Operational Excellence***

The highest levels of operational excellence result in the following desired industry outcomes:

- Sustained, significant event-free operations
- Sustained, high levels of plant performance consistent with safety and reliability goals
- Well-managed, understood, and preserved safety, design and operational margins
- A highly skilled and knowledgeable workforce
- Avoidance of unplanned, long-duration shutdowns
- High levels of plant worker safety

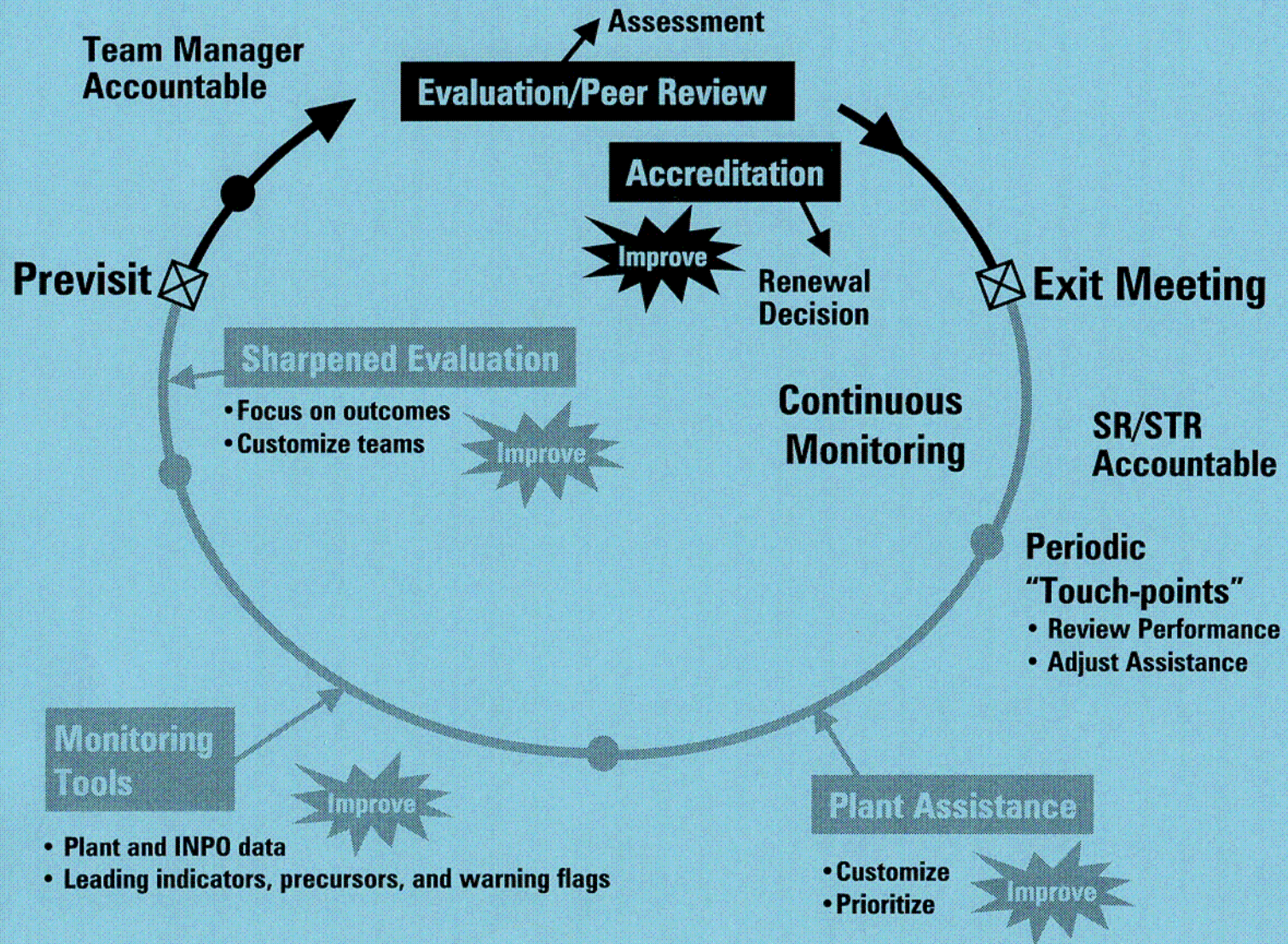
## ***In Pursuit of Excellence***

Although INPO's mission is unchanged, INPO has initiatives under way to increase value during changing times:

- Detect early signs of declining and improving plant performance
- Provide utility senior managers insightful and timely plant performance information
- Develop an industrywide intolerance for equipment failures impacting safety and reliability
- Share industry standards for self-assessment and corrective action activities
- Implement an industrywide strategy to improve human performance
- Improve communication with members through Web-based technologies
- Establish more ongoing plant/utility interactions to share performance information
- Develop more effective training methods to educate the next generation of nuclear professionals



# INPO Operational Model



# Nuclear Utility Consolidation – Lessons Learned

January 2000

## 1. *Define the business strategy and critical success factors.*

- Develop basic strategy for involvement in nuclear generation. (Seller vs. Buyer)
- Establish a set of principles and expectations for performance during transition.
- Ensure that the responsibility for safe operation and maintenance of the plant belongs to the current license holder.
- Buyer and seller should fully cooperate during the transition.

## 2. *Develop a communications plan that provides the flexibility to meet emergent needs.*

- Select leaders from all levels to assist in implementing the communication plan.
- Communicate the transition strategy, including the reasons for and benefits of the changes.
- Communicate early, often, consistently, and clearly, keeping all stakeholders informed throughout the transition.
- Communicate how changes will be implemented.
- Emphasize issues that affect employees individually, such as jobs, salaries, and benefits.
- Be accessible to employees to answer questions, and demonstrate behaviors consistent with messages.
- Conduct face-to-face communication sessions with employees. Avoid speculation.
- Use a variety of methods to obtain feedback.
- Communicate to the local community and leaders how the new company will fit into their community.

## 3. *Manage personnel issues.*

- Get Human Resources involved early. A key personnel issue arising at the beginning of the consolidation period may be difficult to “backfit.”
- Decide salary/benefits issues as soon as possible. Be prepared to explain what will or will not change and how the consolidation will affect each employee.

- Identify key performers within the organization, and personally recruit each individual early in the process.
- Use an incentive system to assist in keeping your key performers.
- Announce staffing changes as soon as they are known, and implement them in a controlled but expeditious manner.

## 4. *Control process changes.*

- Standardize the business processes/infrastructure, such as human resources, budgeting, and computer systems, to the extent feasible.
- Review all processes that affect employee transfers and promotions.
- Decide each process change on a case basis. Make changes more quickly if plant performance is weak.
- Use standard approaches developed for the industry, such as those developed through INPO or NEI, to assist in changing plant processes only to the extent practical.
- Minimize the number of simultaneous changes.

## 5. *Above all else, focus on safe plant operation. (Manage distractions.)*

- Ensure that senior managers maintain focus on plant safety, reliability, and overall performance. Communicate why this is important and how this will add value in the future.
- Avoid burdening plant managers with significant new duties related to the transition. Consider appointing a transition director to assume these additional duties.
- Expect downturns in performance, and develop precursor metrics to provide early identification of performance issues.
- Minimize the impact of the due-diligence process on normal plant routine.

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# Consolidated Data Reporting

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## Current industry reporting:

- Equipment Performance Information Exchange (EPIX) ⇒ about 300 data elements
- WANO Performance Indicators ⇒ about 200 data elements
- NRC Revised Reactor Oversight Process ⇒ about 100 data elements
- NRC Monthly Operating Report ⇒ about 50 data elements

# Consolidated Data Reporting

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## GOALS

- Develop industry guidance---  
comprehensive set of data definitions
- Implement method to control data  
definition/requirement changes
- Develop single data collection system
  - Reduce input redundancies / effort
  - Support industry and NRC needs

# Consolidated Data Reporting

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- Industry input to INPO and NEI laments overlap in data reporting to meet WANO, INPO, and NRC needs
- NEI Data Review Group
  - Established in early 2000 to assess problem, recommend improvements
  - Will report to NSIAC Steering Committee in December

# Consolidated Data Reporting

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- SS Unavailability Task Force---met in October 2000 to discuss different definitions / uses of safety system unavailability data elements
- About 50 data reporting elements in the RROP are similar (or redundant) to items reported to INPO / WANO
- About 10 data reporting elements in the MOR are similar (or redundant) to items reported to INPO / WANO

# Consolidated Data Reporting

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## Action Plan

- INPO working on an industry guidance document
  - To provide a single source of data requirements
  - Initially combines requirements from WANO, EPIX, NEI, and Generic Letter 97-02 for MOR
- INPO will form an industry committee
  - To review this document
  - To recommend a method for controlling changes to the document and the reporting requirements

# Consolidated Data Reporting

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## Action Plan (continued)

- Transfer to INPO (from NEI) responsibility related to RROR data collection / reporting
- Develop Web-based data entry
  - Enable reporting the data elements through single interface
  - Will include data quality controls for RROR and MOR data used by NRC
- Will continue to share data with NRC in accordance with current agreements



# Consolidated Data Reporting

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## Action Plan (continued)

- Responsibility within INPO:
- Analysis Division---(George Felgate)
  - Performance Analysis Department (DM Gary Welsh and ADM Dave Hembree)
    - Also responsible for managing EPIX and U.S. performance indicator program (working with WANO)
  - Events Analysis Department (DM Jim Lynch)

# STATUS OF THE REACTOR OVERSIGHT PROCESS

## STATUS OF THE REACTOR OVERSIGHT PROCESS

William Dean  
Inspection Program Branch  
November 13, 2000



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## TOPICS FOR DISCUSSION

- Initial Implementation Status
- Program Feedback
- Key Issues
- Future Activities/Program Development

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## INITIAL IMPLEMENTATION STATUS

- Completed 7 months of initial implementation
- Have exercised many aspects of the ROP
- Generally positive feedback, though issues exist
- Mid-cycle Assessments to be performed in November
- Spectrum of plant performance noted

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**PROGRAM FEEDBACK**

- Steady stream of stakeholder feedback
- NRC/NEI Working Group activities
- Initial Implementation Evaluation Panel
- Mid-cycle Public Forums
- Regional site visits
- Federal Register Notice
- Public Lessons Learned Workshop

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**KEY ISSUES**

- Threshold for documenting issues in Inspection Reports
- Cross-cutting issues
- Performance Indicator issues
- Fire Protection Inspection and SDP issues
- Safeguards Inspection and SDP issues

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**FUTURE ACTIVITIES/DEVELOPMENT**

- SDP Improvements and enhancement
- Scram PI Pilot Program
- Redefine Unplanned Power Changes and Unavailability PIs
- Develop industry trends assessment process
- Risk-based Performance Indicator development
- Conduct self-assessment of initial implementation
- Lessons Learned Workshop
  - Internal
  - External
- Commission paper and meeting June/July 2001

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# STEAM GENERATOR ISSUES



Division of Engineering  
November 13, 2000

# STEAM GENERATOR ISSUES UNDER THE REACTOR OVERSIGHT PROCESS

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- NRC is developing an action plan to address steam generator issues
  - OIG and IP2 lessons learned task group findings
  - NEI 97-06
  
- Development of initial version of action plan scheduled for completion in November 2000
  
- NRC will solicit stakeholder input in resolving various issues contained within the action plan
  
- NRC will be evaluating changes to the steam generator tube integrity portion of the inspection program as a result of recent industry experience (e.g., IP2, ANO-2)
  - Regulatory Issue Summary 2000-22, November 3, 2000
  - Indian Point 2 Technical Evaluation Report, October 11, 2000

# REGULATORY ISSUE SUMMARY

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- Consider relevant operating experience and take appropriate action including assessing root cause of all degradation mechanisms
- Data quality
- Robustness of qualification program including site specific qualification
- Consider flaw size measurement error when selecting in-situ pressure test candidates
- Termination of in-situ tests due to leakage and rate of pressurization issue
- Benchmarking operational assessments and fractional flaw method

# STEAM GENERATOR BASELINE INSPECTION

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- IP 71111.08, “Inservice Inspection Activities,” addresses baseline inspection
  
- Focus of IP71111.08
  - Addresses ISI of steam generator tubes and ISI of other reactor coolant pressure boundary components
  - Samples the effectiveness of licensee’s program at meeting ASME Code requirements
  - Assesses whether indications/defects are appropriately dispositioned
  
- Inspection effort budgeted biennially - 32 person hours per site
  
- No specific inspection devoted to steam generator tube eddy current testing

# STEAM GENERATOR SUPPLEMENTAL INSPECTION

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- IP 50002, “Steam Generators”
  
- More detailed assessment of steam generators
  - Fabrication of steam generator and tube materials
  - Qualification of eddy current personnel
  - Water chemistry
  - Primary-to-Secondary leakage
  
- Expected to take 175 person hours per site



# FUTURE ACTIVITIES

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- As a result of steam generator (SG) operating experience, NRC is evaluating need to change inspection guidance
  - More hours for SG inspections???
  - More detailed guidance in both the baseline and supplemental inspections???
- NRC will be evaluating need for performance indicators related to SG tube structural and leakage integrity
- Opportunity for stakeholder involvement in any potential modifications to the inspection program will be through our normal process
  - Will seek stakeholder involvement in SG action plan (e.g., NEI 97-06)
- Milestones
  - SG Workshop with stakeholders by mid 2001
  - Working on endorsement of NEI 97-06

# **Industry Implementation of Work Hour Limits for Personnel Performing Safety-Related Functions**



**Division of Inspection Program Management  
November 13, 2000**

# Policy on Factors Causing Fatigue of Operating Personnel at Nuclear Reactors

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## Overtime Guidelines

### ■ Pre-conditions

- Unforeseen circumstances
- Periods of shutdown
- To be used on a temporary basis

### ■ Limits

- ▶ Individuals should not be permitted to work more than:
  - 16 hours straight
  - 16 hours in any 24-hour period
  - 24 hours in any 48-hour period
  - 72 hours in any 7-day period
- ▶ A break of at least 8 hours should be allowed between shifts

# **Policy on Factors Causing Fatigue of Operating Personnel at Nuclear Reactors**

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- **Plant staff who perform safety-related functions**
  - Senior Reactor Operators
  - Reactor Operators
  - Auxiliary operators
  - Health Physicists
  - Key Maintenance Personnel
- **Key Maintenance Personnel**
  - defined in GL 83-14
  - maintain, repair, modify, or calibrate safety-related SSCs
  - Includes direct supervisors

# BACKGROUND

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- February 25, 1999 - Several congressmen raise concerns regarding low staffing levels and excessive overtime
- April 1999 - Preliminary review of NRC policy (GL 82-12) implementation.
  - few events at NPPs attributed to fatigue
  - number of events could not be reported with certainty
  - several instances identified each year of scheduling practices inconsistent with the policy
  - NRC committed to reassess policy

# BACKGROUND

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- September 28, 1999 - Commission received a petition for rulemaking (PRM-26-2)
  - Requests amending 10 CFR Parts 26 and 55
  - Requests clear and enforceable working hour limits
- February 23, 2000 - Staff held public meeting to discuss policy implementation concerns
- July 2000 - NEI collected data concerning use of overtime and guideline deviations
- September 14, 2000 - Staff held public stakeholder meeting to discuss analysis of NEI data concerning policy implementation

# STATUS

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The staff has completed the following activities:

- analysis of data collected by NEI
- review of current plant TS related to the control of working hours
- evaluation of enforcement issues
- review of scientific literature
- review of other regulatory agency approaches
- development of responses to public comments

# **POLICY IMPLEMENTATION**

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## Scope of Personnel

- Policy applies to personnel who perform safety-related functions
- There is inconsistency among sites in the scope of personnel covered by plant work hour limits
- A few sites do not cover any maintenance personnel which appears contrary GL 83-14



# **POLICY IMPLEMENTATION**

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## Deviations From Guidelines

- Policy guidelines allow more hours and less rest than work hour limits of other agencies studied to date
- Policy provides for deviations in “very unusual circumstances”
- At one quarter of the sites that responded, 1,000 to more than 6,000 guideline deviations are authorized annually

# POLICY IMPLEMENTATION

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## Use of Overtime

- Policy objective is “maintain adequate shift coverage without routine heavy use of overtime”
- 8 of 36 sites providing data had more than 20% of personnel covered by policy working in excess of 600 hours of overtime per year
- The percentage of personnel working in excess of 600 hours of overtime increased from 7% in 1997 to 11% in 1999

# **Future Activity**

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- Staff will provide the Commission with an assessment of the policy and recommendation concerning PRM-26-2 in 12/00