

Agenda Item 3 (1) - Pressure Water Reactor (PWR) Sump Performance (GSI-191)

- Statement of Issue: Sump clogging could degrade the ability to achieve long-term cooling following a loss-of-coolant accident
- Regulatory Response Plan
 - Provide Guidance to Industry
 - NRC-sponsored research: NUREG/CR-6762 “GSI-191”
 - Regulatory Guide 1.82, Rev. 3
 - Two-Phase generic communication approach
 - Bulletin 2003-01
 - Generic Letter

PWR Sump Performance (GSI-191)(cont.)

- Progress-to-Date

- Bulletin 2003-01, “Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors” issued June 9, 2003 – Responses under evaluation.
- NEI Activities to formulate industry response
 - NEI letters on use of Leak Before Break (LBB)
 - NEI draft sump evaluation methodology-NRC comments issued January 2004
- Generic Letter in Preparation – To be issued summer 2004

Agenda Item 3 (2) - Power Uprates (Unexpected Structural Problems)

- Extended Power Uprate (EPU) for Quad Cities Unit 2 (EPU, 17.8% Increase)
 - Steam dryer cover plate failure – June 2002
 - Steam dryer outer bank hood failure – June 2003
- Extended Power Uprate for Dresden Unit 2
 - Steam dryer vertical hood panel cracks – October 2003
 - Feedwater (FW) sparker holes/broken FW probe – October 2003
 - Broken FW probe – December 2003
- Extended Power Uprate for Quad Cities Unit 1
 - Steam dryer failure – November 2003
 - Main steam line relief valve/supports – November 2003

Power Upgrades

(Unexpected Structural Problems cont.)

- Extended Power Upgrade for Dresden Unit 3
 - Steam dryer hood cracks – December 2003
 - Broken FW probe – December 2003
- Regulatory Response – NRC Information Notice 2002-26, and Supplements 1 and 2
 - Alert industry to unexpected failures. High-cycle fatigue was noted as suspected cause.
 - No licensee response required
- NRC Information Notice 2004-06
 - Alerts industry to failures of feedwater isokinetic sampling probes under EPU conditions

Power Upgrades

(Unexpected Structural Problems cont.)

- Industry Response
 - GE Issues SIL 644 – August 2002
 - GE Issues SIL 644, Revision 1 – September 2003
 - Boiling Water Reactor Vessel and Internals Projects tasked to develop inspection guidelines
 - Boiling Water Reactor Owners Group assessing impact of power upgrade on component integrity
- Potential Additional Regulatory Response
 - Limit power to pre-EPU levels
 - Incorporate lessons learned in EPU review
 - Additional generic communications

Agenda Item 3 (3) - Risk-Informed Regulation Update (50.44, 50.48, 50.69, and 50.46)

- 50.44 Combustible Gas Control
 - Remove requirements for hydrogen recombiners
 - Relax requirements for H₂ and O₂ monitoring equipment
 - Safety requirements for future plants
 - Retain existing requirements for Mark I, Mark II, Mark III, and Ice Condenser
- 50.48 Fire Protection
 - Endorse National Fire Protection Association (NFPA) Standard 805
 - Voluntary alternative to allow licensees to use risk information and engineering analyses to implement performance-based approaches
 - The final rule is with the Commission

Risk-Informed Regulation Update
(50.44, 50.48, 50.69, and 50.46) (cont.)

- 50.69 Special Treatment Requirements
 - Risk-Informed categorization of structures, system and components (SSC)
 - Revise treatment requirements based on risk significance
 - Final rule due to the Commission 6/30/04

Risk-Informed Regulation Update (cont.)

(50.44, 50.48, 50.69, 50.46)

- 50.46 Emergency Core Cooling System Requirements
 - 3/31/03 Staff Requirement Memorandum (SRM) direction
 - Reevaluate loss-of-coolant accident (LOCA) frequencies as the technical basis
 - Large Break LOCA Redefinition
 - Interaction with stakeholders
 - Technical work underway
 - SECY-04-0037, asked the Commission to provide direction and guidance on the key issues
 - Decoupling of the assumed LOCA-and Loss-of-Offsite-Power
 - Boiling Water Reactor Owners Group (BWROG) is submitting a topical report for review

Risk-Informed Regulation Update (cont.) (50.44, 50.48, 50.69, 50.46)

- SECY-04-0037, asked the Commission to approve the staff's revised approach to first review the BWROG pilot exemption request before rulemaking.
- ECCS Acceptance Criteria.
 - Rulemaking scheduled to begin in FY05
- Appendix K ECCS Evaluation Model
 - No further work planned

Agenda Item 4 - Strategic Planning for Improving Effectiveness of Regulation

- NRC has developed specific strategies in agency Strategic Plan
- Strategies emphasize use of risk considerations and performance-based approaches
- Commission Policy Statement on Probabilistic Risk Assessment (PRA)
- Commission White Paper on Risk-Informed and Performance-Based Regulation

Strategic Planning for Improving Effectiveness of Regulation

- NRC activities summarized periodically in Risk-Informed Regulation Implementation Plan
- Successful applications include:
 - Reactor Oversight Program
 - Licensing Actions
 - Revised rules

Agenda Item 5 – Timeliness of Regulatory Intervention Against Symptoms of Degradation of Safety Culture

- Monitor international safety culture/ safety management developments**
- Monitor and inspect, if necessary, events involving safety culture/ safety management**
- Assess some attributes of safety culture/ safety management through the NRC inspection process**
- Assess the area to determine if further guidance for regulatory enhancement is needed**

Current NRC Commission Guidance

- **Policy Statement on the Conduct of Nuclear Power Plant Operations (54FR3424) -1989**
- **10 CFR 50.7 “Employee Protection”**
- **Policy Statement on the Freedom of Employees in the Nuclear Industry to Raise Concerns without Fear of Retaliation**
- **Inspection Procedure (71152) – Identification and Resolution of Problems**

Experiences and Lessons Learned in Licensee Safety Culture

- **Davis Besse Special Inspections**
 - **Evaluated Effectiveness of Corrective Actions for Safety Culture**
 - **Evaluated Long Term Corrective Actions in the area of Safety Culture**
- **Salem/Hope Creek Special Review of Work Environment**
 - **Public Meeting to Discuss Assessment Plan**

TALKING POINTS

Agenda Item 3 (1) Pressure Water Reactor Sump Performance (GSI-191)

STATEMENT OF ISSUE:

As a result of a loss-of-coolant accident, debris is generated by the high-energy fluid stream from the break including:

- Reactor coolant system insulation
- Paint
- Concrete

The debris may migrate to the sump and accumulate on the sump screens resulting in loss of net-positive suction head for the recirculation pumps. The resulting failure could result in loss of recirculation flow.

REGULATORY RESPONSE PLAN:

- Guidance to Industry
 - The Nuclear Regulatory Commission (NRC) sponsored research program NUREG/CR-6762, "GSI-191: Parametric Evaluations for Pressurized Water Reactor Recirculation Sump Performance," used a combination of plant-specific and generic information to model sump performance. Sump clogging is a plausible generic concern for pressurized water reactors (PWRs) and that regulatory action may be warranted. The results of this research pointed out the need to conduct plant-specific analyses to determine if sump performance could potentially be degraded.
 - NRC has issued Regulatory Guide 1.82, Revision 3, "Water Sources for Long-term Recirculation Cooling following a Loss of Coolant Accident." This Regulatory Guide provides the industry with guidance on evaluating and maintaining sump availability and long-term cooling.
- Two-Phase generic communication approach
 - Bulletin 2003-01

NRC informed pressurized water reactor licensees of the results of the research program and asked the licensees to either confirm their compliance with existing regulatory requirements, or describe interim risk reduction measures they would put in place to reduce potential risks associated with sump blockage. If, while taking appropriate risk-

reduction measures, a licensee discovers that they are not in compliance with our regulations, they are required to take prompt corrective action.

- A Generic Letter to address long-term resolution of this issue will request information from licensees regarding the status of their compliance with 10 CFR 50.46(b)(5), including the licensee's plans for performing analyses and containment walkdowns, and the methodologies to be employed to justify their conclusions.

PROGRESS-TO-DATE:

- NRC staff's evaluation of Industry Response to Bulletin 2003-01 - Most responses are acceptable. Operator emergency response to a clogged sump is under development by owner's group.
- Nuclear Energy Institute (NEI) Activity
 - On October 31, 2003, NEI submitted a draft of "PWR Containment Sump Evaluation Methodology." The staff has completed its initial review of the NEI Guidelines and has several significant comments that NEI needs to address. On January 27, 2004, the staff informed NEI of the significant comments.
 - The staff has completed its review of NEI "leak-before-break (LBB)", and Fracture Mechanics Letters and plans to send NEI a letter documenting the results of the staff review in Spring 2004. The staff concluded that any decision to extend LBB for the purpose of addressing loss-of-coolant accident (LOCA) - generated debris and sump performance to the detriment of defense-in-depth principles is, at a minimum, a policy decision which would require Commission approval.
- Generic Letter - A draft is to be issued for comment in Spring 2004 and final issuance in Summer 2004.

TALKING POINTS

Agenda Item 3 (2) Power Uprates (Unexpected Structural Problems)

FAILURES AT QUAD CITIES AND DRESDEN:

The failures seem to be caused by high-cycle fatigue due to:

- High frequency acoustic resonance (Quad Cities Unit 2 – July 2002)
- Low frequency pressure loading (Quad Cities Unit 2 – July 2003)
- Vortex shedding frequency resonance (Dresden FW probe - December 2003)

On January 22, 2004, General Electric (GE) indicated during a telephone conference that a previously unevaluated fluctuating pressure load in the acoustic range is believed to be contributing to adverse vibration effects during power uprates.

REGULATORY RESPONSE:

- The NRC issued information letters to alert industry to the unexpected failures which occurred following power uprates

INDUSTRY RESPONSE:

- GE sent Service Information Letters (SIL) to Boiler Water Reactor (BWR) Owners in August 2002. In SIL 644, GE recommended that BWRs with BWR/3 steam dryers with 0.25-inch cover plates consider reviewing inspection records, monitoring plant parameters, and increasing frequency of moisture content measurements. BWRs with BWR/3 steam dryers operating or planning to operate above original licensed power should perform visual examination of cover plates and welds at next refueling outage.
- The September 2003, Supplement 1 to SIL 644, GE recommended that all BWRs operating or planning to operate above original licensed power consider reviewing inspection records, monitoring plant parameters, increasing frequency of moisture content measurements, and conducting steam dryer inspections based on their specific design to identify failures that have occurred in the steam dryer.
- The NRC staff, in a letter dated September 26, 2003, provided numerous concerns regarding provisions in SIL 644, Supplement 1, such as the lack of proactive measures to avoid adverse flow effects from power uprates.

POTENTIAL ADDITIONAL REGULATORY RESPONSE:

- NRC may restrict power levels, for certain licensees with EPU already issued, until the problem with flow-induced vibration is understood/resolved.

- The NRC staff may review EPU test data, load definitions, and steam dryer analysis methodology in conjunction with EPU submittals.
- The NRC may issue an, as yet, unspecified, generic communications.

TALKING POINTS

Agenda Item 3 (3)
Risk-Informed Regulation Update
(50.44, 50.48, 50.69, and 50.46)

50.44 COMBUSTIBLE GAS CONTROL: Risk-Informed Changes to 10 CFR 50.44

Brief Description: As a result of a realistic reevaluation of the fundamental basis of the regulation, and applying realistic risk and uncertainty analyses to determine the need and relative value of this regulation that addresses a design basis issue, the Commission amended the regulations in 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water -Cooled Power Reactors." Specifically,

- The revised rule eliminates the requirements for hydrogen recombiners and hydrogen purge systems in currently-licensed facilities.
- The revised rule relaxes the requirements for hydrogen and oxygen monitoring equipment to make them commensurate with their risk significance.
 - It eliminates the design basis loss of coolant accident (LOCA) hydrogen release requirement from 10 CFR 50.44, consolidates the requirements for hydrogen and oxygen monitoring into 10 CFR 50.44, and relaxes safety classifications and licensee commitments to certain design and qualification criteria.
 - It also relocates the high-point vent requirements from 10 CFR 50.44 to 50.46(a) and eliminates a requirement that prohibits venting the reactor coolant system if it could "aggravate the challenge to containment."
- The revised rule also specifies requirements for combustible gas control in future water-cooled reactors and non-water-cooled reactors.
- The rule retains existing requirements for ensuring a mixed atmosphere, inerting Mark I and Mark II containments, and providing hydrogen control systems capable of accommodating the amount of hydrogen generated from a metal-water reaction involving 75 percent of the fuel cladding surrounding the active fuel region in Mark III and ice condenser containments.
- The rule retains the existing analysis requirements and equipment survivability requirements for Mark III and ice condenser containments.

Current Status: In the August 28, 2003, SRM, the Commission approved the final rule, as described in SECY-03-0127, Final Rulemaking - Risk-Informed 10 CFR 50.44, "Combustible Gas Control in Containment." On September 16, 2003, the rule was published in the *Federal Register* (68 FR 54123) with an effective date of October 16, 2003.

References:

1. SECY-03-0127, Final Rulemaking - Risk-Informed 10 CFR 50.44, "Combustible Gas Control in Containment," dated July 24, 2003.
2. SRM in response to SECY-03-0127, dated August, 28, 2003.

10 CFR 50.48 FIRE PROTECTION: Revision of 10 CFR 50.48

Brief Description: This rule amends NRC regulations to allow holders of operating licenses for nuclear power plants to voluntarily comply with the fire protection requirements in National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, as an alternative to fire protection requirements currently mandated in the regulations.

This rule allows interested licensees to use risk information and engineering analyses to develop performance-based approaches to meet fire protection requirements. This rule allows licensees to better implement fire fighting resources and reduces unnecessary regulatory burden without compromising safety margins at nuclear power plants. Specifically,

- The rule requires licensees to perform a plant-wide assessment of fire protection areas to meet nuclear safety goals and objectives identified in Chapter 1 of the standard. As part of this assessment, licensees also verify compliance with their existing fire protection licensing basis to establish a baseline to measure future changes in risk that may result from the new approaches. Changes in risk must meet guidelines established in NRC Regulatory Guide 1.174.
- The rule allows licensees to use risk information obtained from engineering analyses, fire modeling, and fire probabilistic safety analyses as inputs to performance-based approaches.
- The rule contains a core of required fundamental elements and minimum design requirements that are not subject to the performance-based approaches. Elements such as maintenance of the plant fire brigade, control of combustibles, and maintenance of fire fighting equipment were deemed to be not appropriate for application of performance-based approaches.
- The rule will reduce the need for licensees to submit exemption requests from the existing deterministic requirements contained in Appendix R to 10 CFR Part 50 or in their existing fire protection license conditions. Further, the rule does not contain certain requirements contained in Appendix R, such as the requirement to take the plant to cold shutdown for repairs.

Current Status: The final rulemaking package has been sent to the Commission for approval. The package includes the final rule, the regulatory analysis, the environmental assessment, and the enforcement discretion policy that addresses the disposition of fire protection noncompliances during the transition to NFPA Standard 805.

References:

1. SECY-04-0050, Final Rule: Revision of 10 CFR 50.48 to Allow Performance-Based Approaches Using NFPA Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, dated March 29, 2004.
2. NFPA Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition.

10 CFR 50.69: Risk-informing Special Treatment Requirements of 10 CFR Part 50

Brief Description: The staff is developing an alternative regulatory framework that enables licensees, using a risk-informed process for categorizing structures, systems and components (SSCs) according to their safety significance (i.e., a judgment that considers both traditional deterministic and risk insights), to reduce the scope of SSCs that are subject to “special treatment requirements.” Specifically,

- The proposed rule would add a new section to 10 CFR Part 50 to provide an alternative set of requirements for treatment of SSCs, using a risk-informed categorization process to determine safety significance of the SSCs.
- A licensee would employ a risk-informed categorization process to determine the safety significance of SSCs and to place the SSCs into one of four risk-informed safety class (RISC) categories. A significant number of SSCs currently deemed by licensees to be either “safety-related” or “important-to-safety” and therefore currently subject to special treatment requirements would be removed from special treatment requirements and be subject to 10 CFR 50.69 requirements.
- Conversely, a small number of SSCs currently not defined as “safety-related” or “important-to-safety,” would be “scoped in” under the alternative risk-informed criteria and therefore would be subject to 10 CFR 50.69 requirements.
- The proposed rule would also require the licensee to determine with reasonable confidence that any resultant increase in risk is small.
- This rulemaking effort, while intended to make the scope of special treatment requirements imposed on SSCs risk-informed, is not intended to allow licensees to eliminate SSC design basis functional requirements, or to remove equipment that is required by the deterministic design basis from the facility. Changes to the design of the facility must continue to meet the current requirements governing design change, most notably 10 CFR 50.59.

Current Status: The staff provided the proposed rule package to the Commission in SECY-02-0176, dated September 30, 2002. By letter dated March 28, 2003, the Commission issued the SRM on SECY-02-0176. The SRM approved publishing the proposed rule and associated draft regulatory guidance subject to the comments noted in the SRM. The staff issued proposed 10 CFR 50.69 for public comment on May 16, 2003. The public comment period ended on August 30, 2003. The staff is currently reviewing these comments. The staff is also reviewing NEI 00-04, “10 CFR 50.69 SSC Categorization Guidance” for possible endorsement for new rule implementation guidance. The final rulemaking package is due to the Commission on June 30, 2004.

References:

1. SECY-02-0176, Proposed Rulemaking to Add New Section 10.CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, and Components", dated September 30, 2002.
2. SRM in response to SECY-02-0176, dated March 28, 2003.

10 CFR 50.46: EMERGENCY CORE COOLING SYSTEM

Brief Description: In an SRM dated March 31, 2003, the Commission provided directions on the rulemaking activities of risk-informed changes to 10 CFR 50.46. The directions have impact on the contents of the four major technical areas of the regulation (including 10 CFR Part 50, Appendix K, and GDC 35) as bellow:

(1) Large Break (LB) LOCA Redefinition/Frequency Reevaluation

- A principal portion of the March 31, 2003, SRM provided direction on redefining the current design-basis break size requirements for demonstrating the acceptability of the ECCS. Current analysis must consider a failure in the worst possible location using the break size, up to and including a double-ended-guillotine-break (DEGB) of the largest pipe in the reactor coolant system. This SRM also direct the staff to reevaluate the LOCA frequencies and use these to form part of the technical basis associated with any subsequent ECCS rule revision.
- In the SRM, the Commission directed the staff to prepare a proposed rule that would allow for a risk-informed maximum break size, as a voluntary alternative for licensees. The SRM included a number of specific provisions about the rule, such as expectations on probabilistic risk assessment (PRA) scope and quality, use of risk metrics, and intended scope of application. Specifically, the Commission directed the staff to provide provisions including:
 - reversibility of facility changes if LOCA frequency changes sufficiently,
 - required use of full-scope (all events and modes) Level 2 PRA,
 - operational (but not functional changes) should be allowed,
 - licensees who seek the benefit of the changes that redefine the design basis LBLOCA requirements should be required to use best-estimate codes.
- Following issuance of the SRM, the staff conducted two public meetings to gather stakeholder input on various aspects of the proposed rulemakings and related technical requirements. In addition, NRC participated in an international conference on the topic of potential LBLOCA redefinition. Industry representatives expressed concern about certain aspects of the SRM provisions, such as the scope of PRA, and how the scope of acceptable facility changes enabled by the rulemaking would be defined. Industry representatives described a broad range of desired or potential plant changes which could be realized from the redefinition of LOCA requirements, such as power uprates, increases in power peaking factors, removal of accumulators and reduced flow rates for containment sprays.
- The industry representatives indicated that depending upon what a proposed rule would allow as plant changes, licensees may not be prepared to invest

significant resources in such areas as PRA improvements unless there was sufficient operational and design flexibility resulting from implementation. The Nuclear Energy Institute (NEI) suggested an approach to the rulemaking that would use risk contribution from excluded LOCAs as the basis for the redefinition, with the intended scope of application being throughout 10 CFR Part 50. This proposal did not identify specific provisions on mitigation of LOCAs beyond the new maximum break size and other aspects that the staff would view as needed for a defensible risk-informed rulemaking.

- The staff's working group (composed of both NRR and RES) has identified certain policy and technical issues that will require resolution to support the potential rulemaking. In SECY-04-0037, dated March 3, 2004, the staff requested the Commission to provide direction and guidance on certain issues. Specifically, these include:
 - two policy issues: Broad vs. Narrow Scope Rule and Safety Implications
 - four guidance areas: Retention of Mitigation Capability, Reversibility, Use of Best-Estimate Evaluation Models, and Redefinition Applicability to Future Plants.

Current Status: The staff is waiting for the Commission to provide further direction and guidance on this rulemaking.

(2) ECCS Reliability/Decoupling of the Assumed LOCA and Loss-of-Offsite Power (LOOP)

- In the March 31, 2003 SRM, the Commission approved the staff's recommendation to develop a proposed rule that would allow for decoupling of the assumed LOCA and LOOP. Regarding the single failure criterion under the ECCS reliability issue, the Commission directed the staff to pursue a broad change to the single failure criterion and inform the Commission of its findings.
- The proposed rule of decoupling of the assumed LOCA and LOOP would amend 10 CFR Part 50 to remove the requirement to postulate unavailability of offsite power for all LOCAs, as presently required by general design criterion/criteria (GDC) 35. By taking into account risk insights, this requirement would be removed for the larger, less likely events, but would be retained for more frequent (smaller) LOCAs. This proposed rule would facilitate certain facility changes, such as elimination of the "fast start" requirement on Emergency Diesel Generators (EDG).
- The BWR Owners Group is planning to submit a topical report for staff review that would support plant-specific exemption requests to implement specific plant changes that are currently not possible with the existing rule requirements. The staff recommended in SECY-04-0037 that it be allowed to finish the review of the topical report and pilot exemption request before developing a rulemaking plan.

Current Status: The staff is waiting for the Commission to provide further direction and guidance on this rulemaking.

(3) ECCS Acceptance Criteria

In the March 31, 2003 SRM, the Commission also approved the staff recommendation to develop a rule for performance-based acceptance criteria for ECCS, such that the rule would be applicable to cladding materials other than zircaloy or ZIRLO™, without the need for exemptions.

Current Status: Due to other priorities, and the ongoing research work that will support the technical guidance, this rulemaking is not scheduled to begin until FY05.

(4) ECCS Evaluation Model

The Commission disapproved the staff's proposal to provide a voluntary alternative to Appendix K which would replace the 1971 ANS decay heat standard with the 1994 ANS standard. The Commission preferred licensees to use approved best-estimate evaluation models, in stead of a piecemeal approach to modify the ECCS evaluation model.

Current Status: The staff has no plan for updating the Appendix K Evaluation Model.

References:

1. SECY-01-0133, Status Report on Study of Risk-Informed Changes to The Technical Requirements of 10 CFR Part 50 (Option3) and Recommendations on Risk-Informed Changes to 10 CFR 50.46 (ECCS Acceptance Criteria,)" dated July 23, 2001.
2. SECY-02-0057, Update to SECY-01-0133, "Fourth Status Report on Study of Risk-Informed Changes to The Technical Requirements of 10 CFR Part 50 (Option3) and Recommendations on Risk-Informed Changes to 10 CFR 50.46 (ECCS Acceptance Criteria,)" dated March 29, 2002.
3. SRM in response to SECY-02-0057, dated March 31, 2003.
4. SECY-04-0037, Issues Related to Proposed Rulemaking to Risk-Inform Requirements Related to Large Break LOCA Break Size and Plans for Rulemaking on LOCA with Coincident Loss-of-Offsite Power, dated March 3, 2004.

TALKING POINTS

Agenda Item 4 Strategic Planning for Improving Effectiveness of Regulation

NRC HAS DEVELOPED SPECIFIC STRATEGIES IN AGENCY STRATEGIC PLAN:

- The NRC staff will:
 - Sharpen the focus on safety to include a transition to a revised NRC reactor oversight program for the inspection, assessment, and enforcement activities.
 - Evaluate operating experience and the results of risk assessments for safety implications.
 - Continue to develop and incrementally use risk-informed and, where appropriate, less prescriptive performance-based regulatory approaches to maintain safety.
 - Use risk information to improve the effectiveness and efficiency of NRC activities and decisions.
 - Utilize risk information and performance-based approaches to reduce unnecessary regulatory burden.
- PRA Policy Statement issued in 1995 – The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy.
- White Paper issued in 1999 – To understand and apply the commitment expressed in the PRA Policy Statement, it is important that the NRC, the regulated community, and the public at large have a common understanding of the terms and concepts involved; an awareness of how these concepts (in both reactor and materials arenas) are to be applied to NRC rulemaking, licensing, inspection, assessment, enforcement, and other decision-making; and an appreciation of the transitional period in which the agency and industry currently operate.

NRC ACTIVITIES SUMMARIZED PERIODICALLY IN RISK-INFORMED REGULATION IMPLEMENTATION PLAN:

- Latest version of Risk-Informed Regulation Implementation Plan (RIRIP) published October 27, 2003, (SECY-03-0181)

SUCCESSFUL APPLICATIONS:

- ROP as described in NUREG-1649
- Licensing actions include many risk-management technical specification initiatives
- Revised rules include Maintenance Rule, Combustible Gas Control, and Special Treatment Requirements.

TALKING POINTS

Agenda Item 5 Timeliness of Regulatory Intervention Against Symptoms of Degradation of Safety Culture

The Commission has provided direction to the staff, in the SRM for SECY-02-0166 dated March 26, 2003, with regard to safety culture and safety management. They have directed the staff to:

MONITOR INTERNATIONAL SAFETY CULTURE/SAFETY MANAGEMENT DEVELOPMENTS

- In light of efforts by foreign regulators to measure and regulate safety culture, the staff should monitor developments abroad so as to ensure that the Commission remains informed about these efforts and their effectiveness. In particular, because subjectivity is a principal objection to the direct regulation of safety culture, the staff should also monitor efforts to develop objective measures that serve as indicators of possible problems with safety culture.

In addition, the NRC staff performs the following:

MONITOR AND INSPECT, IF NECESSARY, EVENTS INVOLVING SAFETY CULTURE/SAFETY MANAGEMENT

- Where a licensee identifies, through a corrective action plan, a deficiency in the area of safety culture, the NRC will perform an inspection under Criterion 16 of Appendix B to 10 CFR Part 50, to assure that the proposed corrective action will prevent repetition of the problem.

ASSESS SOME ATTRIBUTES OF SAFETY CULTURE/SAFETY MANAGEMENT THROUGH THE NRC INSPECTION PROCESS

- The NRC (through the inspection program) currently assesses the adequacy of safety management attributes on a limited basis from a plant performance standpoint. Throughout the NRC's ROP, the overall adequacy of a licensee's safety culture can be inferred from these assessments. Some underlying elements of safety management such as those aspects of safety culture associated with the identification and resolution of problems are currently assessed.
- It is important to note that it is NOT the role of NRC to address "management competencies."

ASSESS THE AREA TO DETERMINE IF FURTHER GUIDANCE FOR REGULATORY ENHANCEMENT IS NEEDED

- The NRC staff is reviewing the ROP to determine if enhancements are needed in the area of Safety Culture. In addition, NRC's Office of Enforcement is preparing a "Best Practices" document which reviews employee concerns programs.

CURRENT NRC GUIDANCE INCLUDES:

POLICY STATEMENT ON THE CONDUCT OF NUCLEAR POWER PLANT OPERATIONS - 1989

- The 1989 Policy Statement on Conduct of Operations is one regulatory document that directly addresses safety culture or safety management. It states that the "Commission believes that the working environment provided for the conduct of operations at nuclear power facilities has a direct relationship to safety. Further it states that: "Management has a duty and obligation to foster the development of a "safety culture" at each facility and to provide a professional working environment, in the control room and throughout the facility, that assures safe operations.

10 CFR 50.7, "EMPLOYEE PROTECTION"

- Safety Conscious Work Environment (SCWE) is defined as "An environment where employees feel free to raise concerns both to their own management and the NRC without fear of retaliation." For SCWE, 10 CFR 50.7, "Employee protection" provides the regulation.

POLICY STATEMENT ON THE FREEDOM OF EMPLOYEES IN THE NUCLEAR INDUSTRY TO RAISE CONCERNS WITHOUT FEAR OF RETALIATION

- The Policy Statement on "Freedom of Employees in the Nuclear Industry to Raise Safety Concerns without Fear of Retaliation," sets forth expectation's that licensees will establish and maintain safety-conscious environments in which employees feel free to raise safety concerns, both to their management and to the NRC, without fear of retaliation.

INSPECTION PROCEDURE (71152)

- A section of Inspection Procedure 71152 "Identification and Resolution of Problems" also covers safety conscious work environment.

EXPERIENCE AND LESSONS LEARNED IN LICENSEE SAFETY CULTURE INCLUDE:

DAVIS BESSE SPECIAL INSPECTIONS

- NRC conducted several special inspections to review the licensee's root cause evaluation and corrective actions (CA) for the management and human

performance aspects of the event that resulted in reactor coolant system pressure boundary leakage and a degraded reactor vessel head. The inspections were conducted by NRC inspectors and specialists, and consultants.

- The Team concluded that the CAs and associated monitoring activities have been sufficiently effective to provide reasonable assurance to preclude recurrence of the conditions which led to the degradation of Davis-Besse's reactor vessel head. While additional actions are planned for continued improvement in the safety culture at Davis-Besse, no issues were identified that would preclude unit restart.

SALEM/HOPE CREEK SPECIAL REVIEW OF WORK ENVIRONMENT

- On January 28, 2004, NRC sent a letter to PSE&G with the interim results of an ongoing special review of work environment. It outlined NRC's concerns on the work environment, emergent equipment issues, and operational decision-making. The letter requested that PSE&G conduct an independent in-depth assessment. PSE&G responded with a letter on February 27, 2004, discussing their actions in response to the NRC letter. They have assembled an independent assessment team to interview employees, review events, conduct analyses, and make recommendations for corrective actions.