RECENT EXPERIENCE IN ALARA PERFORMANCE ASSESSMENT IN THE USA

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Abstract

The objective of the revised Reactor Oversight Process is to monitor licensee performance in the areas of reactor safety, radiation safety, and security. This paper describes the NRC's revised Reactor Oversight Process and how it is used to assess licensee performance against stated objectives in seven areas (or cornerstones) of plant operations. One of the seven cornerstones of the Reactor Oversight Process is Occupational Radiation Safety. This paper focuses on the ALARA objectives of this cornerstone to maintain occupational radiation doses as low as is reasonably achievable (ALARA). Finally, this paper discusses the outcomes of two recent ALARA inspections conducted under the revised Reactor Oversight Process.

Introduction

In the fall of 1998, the Nuclear Regulatory Commission (NRC) embarked on a program to revise its inspection, assessment, and enforcement programs for commercial nuclear power plants by using more objective, timely, and safety-significant criteria to assess plant performance. The revised Reactor Oversight Process is designed to:

- focus inspections on activities where the potential risks are greater
- apply greater regulatory attention to nuclear power plants with performance problems
- objectively measure nuclear power plant performance
- reduce unnecessary regulatory burden on nuclear facilities
- respond to violations of regulations in a predictable manner according to their potential safety impact

Risk concepts have been developed in seven areas or cornerstones (Figure 1). Plant deficiencies in reactor safety are measured by the number of initiating events leading to core damage and the plant's ability to mitigate and prevent events that lead to core damage. Fuel barrier integrity and emergency preparedness were also developed as risk significant cornerstones in the Reactor Safety Strategic Performance Area. The Plant Physical Protection cornerstone is in the Safeguards Strategic Performance Area, and the Occupational Radiation Safety and Public Radiation Safety cornerstones are in the Radiation Safety Strategic

Performance Area. The risk basis for the Occupational Radiation Safety cornerstone is personnel radiation exposure, both individual and collective.

Licensee performance in each safety cornerstone is assessed by evaluating the findings from direct NRC risk-informed inspections and by counting the number of licensee occurrences that meet the performance indicator (PI) definition within the assessment period. (The performance indicators were jointly developed by the NRC and the Nuclear Energy Institute (NEI), which represents the nuclear utilities.) The results of these assessments in each safety cornerstone are used to indicate the relative safety confidence of the cornerstone and whether more

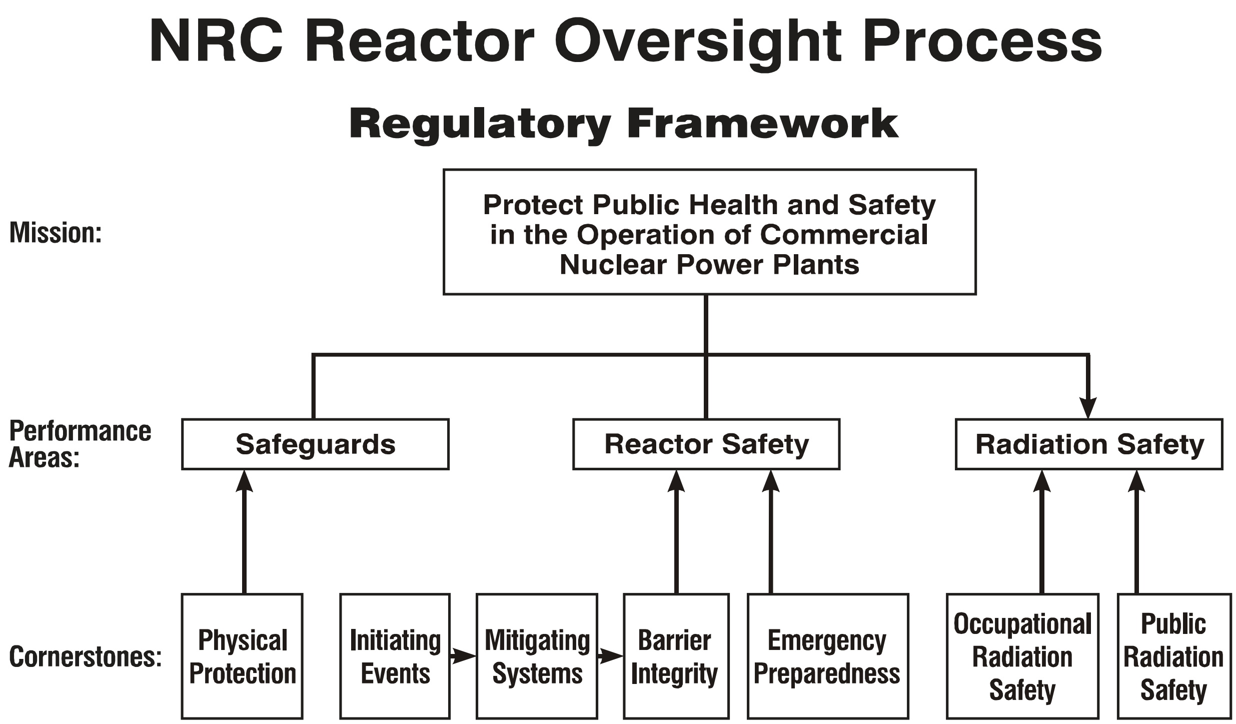


Figure 1
Regulatory Framework of ROP

regulatory oversight is needed. If a plant has an operating occurrence that meets the definition of a PI or if the findings of a NRC risk-informed inspection warrant, the plant is assessed an assessment color. The assessment colors GREEN, WHITE, YELLOW, and RED represent increasing levels of safety significance. A GREEN performance meets the cornerstone objectives. GREEN findings have very low risk significance and little or no impact on safety. WHITE, YELLOW, and RED assessments have greater safety significance and the agency becomes more engaged as licensee performance declines. A GREEN assessment means the licensee is operating its nuclear power plant satisfactorily, a WHITE assessment increases NRC oversight, a YELLOW assessment requires regulatory response, and a RED assessment means unacceptable performance.

The Occupational Radiation Safety Cornerstone

The objective of the Occupational Radiation Safety cornerstone is to ensure adequate protection of worker health and safety from exposure to radiation from licensed or unlicenced radioactive materials during routine operations of civilian nuclear reactors. The health and safety of workers is assured by maintaining their doses within the limits prescribed in 10 CFR Part 20 and ALARA. Occupational radiation safety is based primarily on providing proper radiological surveillance, establishing access and administrative controls to avoid unintended dose to workers, and ALARA planning and controls.

There is a single PI for the Occupational Radiation Safety cornerstone. The first part of this PI monitors occurrences involving the loss of control of access to, and work activities within, radiologically significant areas of the facility. The second part of this PI monitors occurrences involving the degradation or failure of radiological controls (radiation safety barriers) that result in unintended dose. Examples of radiation safety barriers are surveying for, and identification of, radiation hazards, posting of warning signs, providing physical controls to limit entry, and training on, and implementation of, radiological work controls. ALARA issues are outside the scope of this PI since the PI is intended to measure individual high and very high radiation area occurrences and unintended exposure occurrences to individuals, but not high collective exposure occurrences. ALARA issues and other issues associated with this cornerstone are identified during the risk-informed inspection process.

ALARA Program Inspection

The NRC has revised its inspection procedures to meet the objectives of the revised Reactor Oversight Process. The revised NRC inspection program consists of baseline inspections and supplemental inspections. Baseline inspections are the minimum level of inspection that all licensees are subject to. Attachment 2 to Inspection Procedure 71121 (Occupational Radiation Safety) contains baseline inspection requirements for ALARA planning and controls.
The inspection procedures in Attachment 2 take a station-wide approach that includes review of maintenance planning, work scheduling, engineering and operations, as well as ALARA activities of the radiation protection department. Plant performance is based on source reduction (through equipment decontamination or shielding), work planning and scheduling efficiencies, and work implementation controls. The inspection procedures allow for pre-outage ALARA planning inspections, inspection of ALARA implementation during outages, and post-outage examination of ALARA results. To ensure that the licensee’s exposure estimates are reliable, the exposure estimating methods are examined and are corroborated using past plant experience.

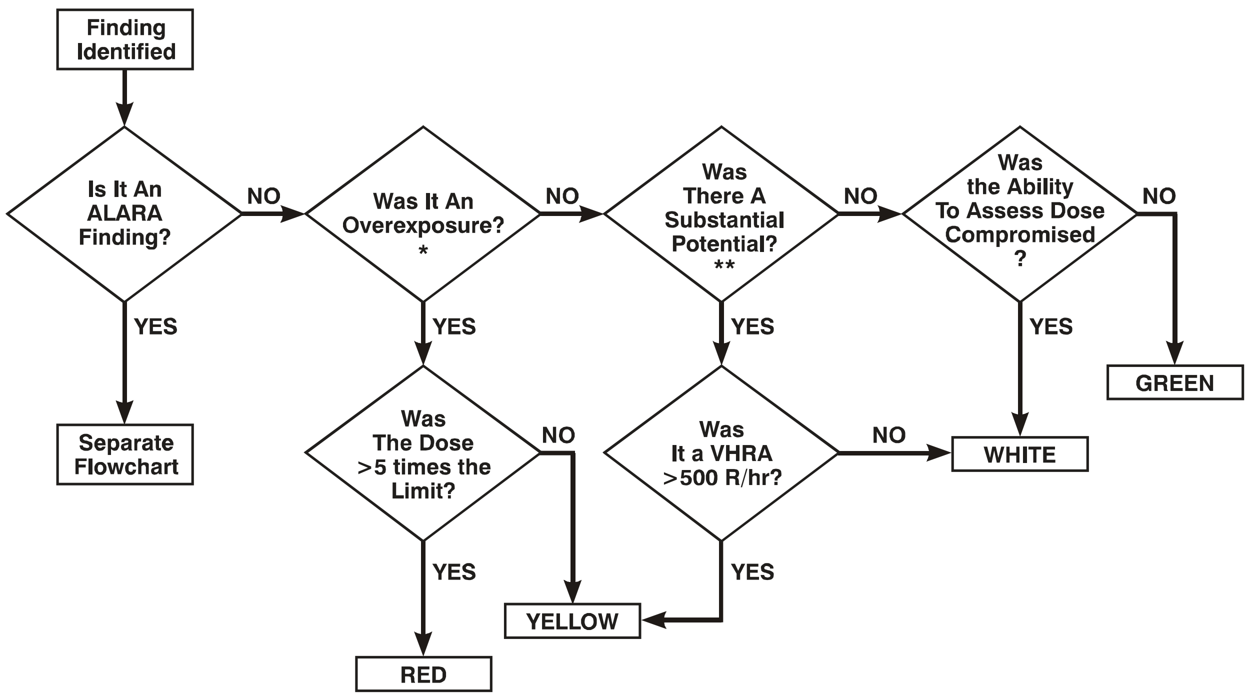
ALARA Program Inspection Finding Assessment

Screening criteria are applied to issues identified in the risk-informed inspection process to determine if the issues affect any of the seven cornerstones of safety. The screening criteria are given in Appendix B of Manual Chapter 0610*. The Group 1 criteria are used to screen out minor issues. Those issues which are greater than minor are subjected to the Group 2 criteria. Group 2 criteria are used to identify issues which affect one of the safety cornerstones. Issues which satisfy the screening criteria are assessed for safety significance by the Significance Determination Process (SDP). The SDP is a logic flowchart for evaluating findings identified in

the risk-informed inspection process. After being processed through the SDP flowchart, findings are assigned a color based on safety significance.

The Occupational Radiation Safety SDP is designed to evaluate findings in the Occupational Radiation Safety cornerstone in the following four areas: (1) ALARA findings, (2) overexposures, (3) substantial potential for overexposure, and (4) inability to assess dose (Figure 2).

Occupational Radiation Safety SDP



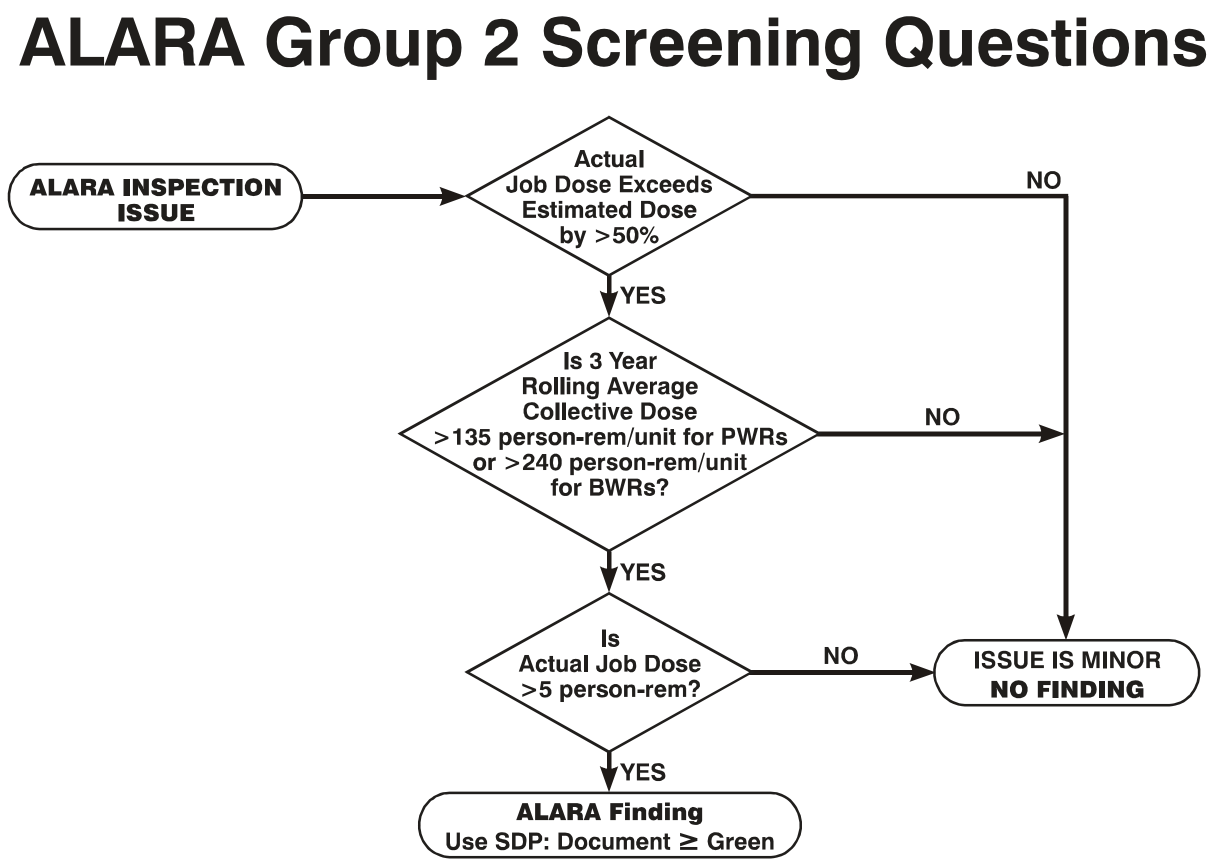
*** If it is an overexposure attributable to a DRP (Hot Particle) in excess of the OE enforcement discretion (75 µCi-hr), then the finding is WHITE.**
**** There is no Substantial Potential for Overexposure (SPO) Finding for a DRP. Such a possibility is outside the scope of the SDP.**

Figure 2
Occupational Radiation Safety SDP

The objective of the ALARA part of the SDP flowchart is to evaluate the overall effectiveness of a licensee's radiation protection program with respect to maintaining occupational doses ALARA. The SDP considers job planning, job control, and average collective dose to help meet this objective. Job planning and job control are very important aspects of an effective ALARA program. To ensure that the job doses are maintained as low as is reasonably achievable, a licensee must ensure that jobs performed in radiation areas receive sufficient pre-job planning. In addition, a licensee must establish adequate ALARA job controls to ensure that the job is performed as planned and within the estimated dose limits established for the job. The use of

ALARA job controls ensures that a licensee can modify or halt a job if job or radiological conditions change enough to increase the estimated job dose. Job doses which significantly exceed the estimated job dose limits can be indicative of inadequate job planning or poor job control.

When an ALARA issue is identified in the risk-informed inspection process, it is subjected to a series of screening criteria to determine whether it is a minor issue or it affects the Occupational Radiation Safety cornerstone. The Group 1 questions filter out all minor ALARA issues. To be an ALARA finding, an ALARA issue must satisfy three Group 2 screening criteria (Figure 3).



Logic for designating an ALARA inspection issue as an ALARA finding or as a minor issue.

Figure 3
ALARA Group 2 Screening Criteria

The first ALARA screening criterion asks if the actual job dose associated with the ALARA issue exceeds the estimated dose by more than 50%. If the actual total job dose is less than the estimated job dose estimate, or if the actual dose does not exceed the job dose estimate by more than 50%, there is no ALARA finding. If the actual job dose exceeds the estimated dose by more than 50%, then the staff proceeds to the second ALARA screening criterion.

The second screening criterion asks if a PWR's current 3-year rolling average collective dose is more than 135 person-rem/unit and if a BWR's is more than 240 person-rem/unit (based on the 1995-1997 median U.S. collective dose). Currently, if the plant's 3-year rolling average collective dose does not exceed the metric, there is no ALARA finding. If the 3-year average for the plant exceeds the average, the third screening criterion is applied.

The third ALARA screening criterion asks whether the actual job dose is more than 5 person-rem. If the actual job dose associated with the ALARA issue exceeds the estimated job dose by more than 50% but is less than 5 person-rem, there is no ALARA finding. If all three of the ALARA screening criteria are answered in the affirmative, the issue is classified as an ALARA finding and is analyzed for significance using the ALARA portion of the SDP.

The ALARA programs at most plants state that a detailed ALARA review must be performed for any job which is expected to result in a total job dose greater than a fixed collective dose value (usually 1 or 2 person-rem).

For the purpose of the ALARA part of the SDP, a job is defined as the lowest unit of related tasks or work functions for which the licensee performs a separate ALARA evaluation and establishes ALARA controls. This ALARA evaluation should include an assessment of the following:

- Planned job dose
- Personnel external and internal exposure controls
- Problems encountered and lessons learned in performing this or a similar job in the past

The resulting radiation work permit or job planning package for the job should address the following to ensure that worker doses are maintained ALARA:

- Job scope and worker complement
- Radiological conditions at the job site
- Health physics coverage
- Tools, equipment, and utilities needed
- Location of and access to job site
- Environmental conditions

Some licensees include in their ALARA job review an evaluation of doses associated with preparatory work (such as setting up and removing scaffolding and shielding, removing or replacing insulation, and providing lighting and services to the work area) in addition to the doses incurred from performing the work itself. Since it is difficult to calculate the doses associated with setting up shielding or scaffolding for a job if the shielding or scaffolding is used for multiple jobs, some licensees perform separate ALARA evaluations covering all shielding work or all scaffolding work done during an outage to support outage activities. In that case, the shielding and scaffolding work would be categorized as a single job and the estimated doses for the installation and removal of shielding or scaffolding would be compared with the actual shielding or scaffolding doses. If a licensee performs a single ALARA evaluation for similar tasks performed on multiple components (such as eddy current testing, tube sleeving, or tube plugging for multiple steam generators), the total dose from working on all the components would be used as the job dose.

Job conditions or work scope can change after job planning has been done. Perturbations in the reactor coolant system can result in unexpected elevated radiation levels in portions of the plant. Component testing failures or emergent work can result in the unplanned expansion of work scope. These changes in job conditions and work scope can lead to significant increases in job doses. ALARA job reviews should include contingency plans, whenever possible, for changes in job conditions or work scope. The contingency plans can require the use of additional shielding, modification of the job scope, the rescheduling and postponement of jobs, the use of skilled workers, and/or the relocation of work activities. An effective ALARA program should have ALARA controls to stop work to consider contingency plans when radiological conditions or work scope changes. Additional work should be categorized as such with an associated exposure estimate. The actual job dose is then measured and compared to the combined original and additional work scope exposure estimates.

The ALARA part of the Occupational Radiation Safety SDP is shown in Figure 4. The first decision gate evaluates the actual measured job dose associated with the ALARA finding. If the actual collective job dose associated with the finding was not greater than 25 person-rem (5 times the job dose in the screening criterion), and if there were two or fewer such occurrences

Occupational Radiation Safety SDP - ALARA Branch

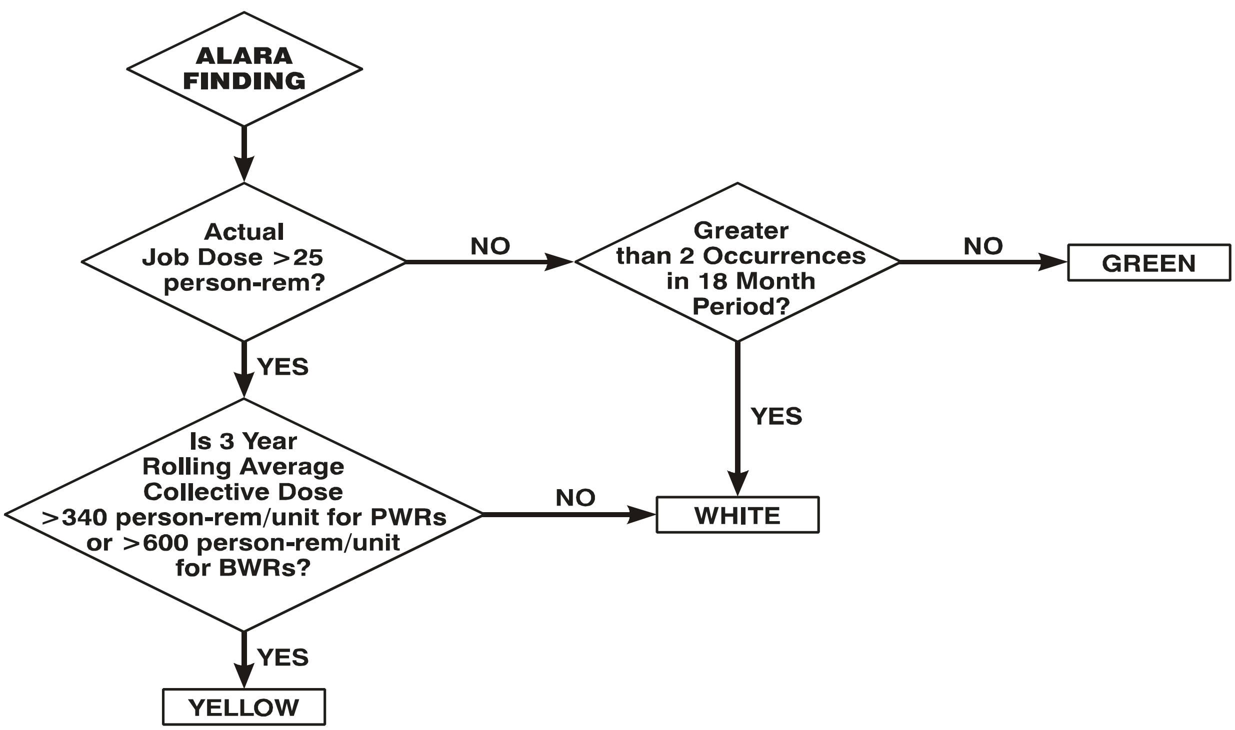


Figure 4
ALARA Branch of Occupational Radiation Safety SDP

in the last rolling 18-month period, the ALARA finding is designated a GREEN finding. If there have been three or more such occurrences in the last rolling 18-month period, the finding is designated a WHITE finding.

If the actual collective job dose was greater than 25 person-rem, the finding is either WHITE or YELLOW depending on the size of the plant's current 3-year rolling average collective dose. If the PWR's current 3-year rolling average collective dose is less than or equal to 340 person-rem or a BWR's is less than or equal to 600 person-rem (2.5 times the 1995-1997 median U.S. collective dose), the finding is a WHITE finding. If the plant's current 3-year rolling average collective dose exceeds the PWR or BWR criteria, then the ALARA finding is a YELLOW finding.

Each calender quarter the resident inspectors and the regional inspection staff review the performance of all nuclear power plants in their region, as measured by the performance indicators and by inspection findings. During these quarterly reviews the staff determines what additional actions the NRC will take for declining performance. These actions are outlined in the Action Matrix in Inspection Manual Chapter 0305, "Operating Reactor Assessment Program."

Findings

A pilot program for the Reactor Oversight Process was conducted at 13 plants at 9 sites during the last 6 months of 1999. Full-scale implementation of the Reactor Oversight Process began on April 1, 2000. During the first 8 months of implementation, roughly a third of the plants received at least 4 days of inspection time under the ALARA Planning and Controls module of the revised inspection procedures. All but 6 plants had received at least 8 hours of inspection time under the ALARA Planning and Controls module.

During the first two quarters of implementation of the Reactor Oversight Process, 21 GREEN findings were identified in the Occupational Radiation Safety cornerstone. A GREEN finding does not involve a significant increase in risk and thus need not be analyzed further. Most of these GREEN findings were related to failure to control access to high radiation areas. There have been only four WHITE findings to date and these findings were in the ALARA area. Three WHITE findings based on an NRC inspection were identified at the Callaway plant and one potential WHITE finding was identified at the Quad Cities, Unit 1 plant.

During a recent inspection at the Callaway plant (documented in Inspection Report No. 50-483/00-17 dated October 4, 2000), NRC inspectors noted a number of licensee-identified ALARA performance deficiencies during Callaway's Refueling Outage 10 (October-November 1999). As documented in the NRC's inspection report, these deficiencies involved: 1) planning and conducting maintenance activities in the vicinity of the reactor coolant system (RCS), during a time period soon after shutdown, when area dose rates were temporarily elevated by a chemical cleaning process designed to remove radioactive particulate from RCS internal surfaces, without commensurate compensatory measures: 2) planning and conducting maintenance activities in the vicinity of the steam generators before the steam generator bowl drains were flushed, resulting in higher than normal area dose rates without commensurate compensatory measures; 3) conducting maintenance activities on the reactor coolant pumps and steam generators without the steam generator secondary sides filled with water, resulting in higher than normal area dose rates without commensurate compensatory measures;

4) conducting maintenance activities without sufficient mock-up training to familiarize contract workers with plant equipment, use of tools, and techniques to effectively reduce the dose that they would receive; and 5) performing maintenance activities with ineffective communications between radiation protection personnel and the primary contractor, which resulted in additional worker exposure due to ineffective planning and sequencing of work activities.

According to 10 CFR 20.1101(b), a licensee must “use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonable achievable (ALARA).” Contrary to this regulation, the NRC determined that the licensee did not use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses ALARA. Although the licensee estimated that the refueling outage would result in a dose to plant workers of 165 person-rem, the actual outage dose of 305 person-rem exceeded this estimate by 85%. The licensee stated that an axial offset anomaly contributed to higher than projected outage dose rates for this outage, but acknowledged that this factor was only responsible for approximately 25% of the dose estimate overrun. After conducting post job reviews, the licensee identified several performance deficiencies which resulted in higher-than-projected doses. One criterion that the staff uses in deciding whether to cite a violation against 10 CFR 20.1101(b) is whether the failure to maintain doses ALARA was an isolated failure to maintain doses ALARA or indicates a more widespread problem with the overall ALARA program. The NRC believes that the performance deficiencies noted at Callaway are indicative of weaknesses in the licensee’s implementation of ALARA planning and job controls.

During the inspection at Callaway, the inspector noted several ALARA inspection issues associated with work conducted during Refueling Outage 10 where job doses were not maintained as low as is reasonably achievable. When these ALARA issues were assessed using the screening criteria, the staff determined that six issues satisfied the Group 2 ALARA screening criteria for ALARA findings and should be evaluated by the ALARA part of the Occupational Radiation Safety SDP . For each of these six findings, the actual job dose exceeded 5 person-rem and exceeded the estimated job dose by more than 50% (Table 1). The third ALARA screening criterion was met because the 3-year rolling average collective dose for Callaway at the time of Refueling Outage 10 was 178 person-rem, which exceeded the PWR screening criterion of 135 person-rem/unit.

The actual job doses associated with two of the six ALARA findings analyzed by the SDP exceeded 25 person-rem. The first ALARA finding involved scaffolding activities in the reactor building. Using the ALARA part of the Occupational Radiation Safety SDP, the actual job dose of 46.345 person-rem for the scaffolding activities exceeded 25 person-rem and the 3-year rolling average collective dose for Callaway exceeded 135 person-rem/unit but did not exceed the SDP PWR criterion of 340 person-rem/unit. Therefore, the inspector characterized the inspection finding for this job as a WHITE finding.

The second ALARA finding which exceeded 25 person-rem involved steam generator activities (eddy current testing, robotic plugging, stabilizing, and electrosleeving). Using the ALARA part of the Occupational Radiation Safety SDP, the actual job dose of 57.659 person-rem for these steam generator activities exceeded 25 person-rem but the 3-year rolling average collective

Callaway Job Doses

Job	Estimated Dose (Person-rem)	1.25 times Estimated Dose (Person-rem)	1.25 X 1.5 X Estimated Dose (Person-rem)	Actual Dose (Person-rem)
Scaffolding in the reactor building	22.000	27.5	41.25	46.345
Remove and install SG manway covers and inserts	3.992	4.99	7.485	8.543
Eddy current/robotic plugging/stabilizing electrosleeving	21.185	26.481	39.722	57.659
Health physics support for primary and secondary SG activities	2.463	3.078	4.618	5.641
Foreign object search and retrieval	1.500	1.875	2.812	6.388
Reactor coolant pump seal removal and replacement	6.605	8.256	12.384	12.869

Table 1
Callaway Job Doses

dose did not exceed the SDP PWR criterion of 340 person-rem/unit. Therefore, the inspector characterized the inspection finding for this job as a WHITE finding.

The third WHITE finding was based on the inspection findings associated with the four other jobs which satisfied the ALARA screening criteria. These jobs were (1) the removal and installation of steam generator manway covers and inserts, (2) health physics support for primary and secondary steam generator activities, (3) foreign object search and retrieval, and (4) reactor coolant pump seal removal and replacement. Although each of the four inspection findings involve jobs which had doses between 5 and 25 person-rem, the SDP states that more than two such occurrences within an 18-month period constitutes a single WHITE finding.

The NRC staff conducted a Regulatory Conference with Callaway on November 9, 2000 to discuss the proposed violation and three WHITE findings. On January 9, 2001, the NRC issued a final determination letter containing the Notice of Violation and describing the three WHITE findings. The licensee was given 30 days to respond to this decision.

During a recent inspection of the Quad Cities Nuclear Power Station (documented in Inspection Report No. 50-254/00-18, dated December 21, 2000), NRC inspectors reviewed outage records

for Refueling Outage Q1R16 (at Unit 1) which occurred in October 2000. The licensee estimated a refueling outage dose for this outage of 277 person-rem. The actual recorded outage dose of 623 person-rem exceeded this estimated dose by 225%. During the inspection, the inspectors identified a potential WHITE ALARA finding affecting the Occupational Radiation Safety cornerstone (Table 2). The finding involved the job of replacing safety relief valves (SRV) attached to the main steam lines which was performed during this outage. The lack of sufficient contingency planning and the use of less experienced workers resulted in a radiation worker dose for this job which was not maintained ALARA. Using historic job dose data, the licensee estimated that the dose from the SRV replacement would be 18.85 person-rem. Surveying the drywell after shutdown, the licensee encountered elevated dose rates far higher than the outage dose rates estimated during the ALARA and work planning phase of the outage preparation. These elevated dose rates were due to cobalt-60 plateout on the inside of the reactor coolant and main steam piping. After measuring the elevated general area drywell dose rates, and before starting work on the SRV replacement, the licensee calculated a revised job dose estimate of 45 person-rem which took into account the increased source term. However, this revised dose estimate did not take into consideration the worker heat stress and reduced efficiency resulting from the planned shutdown of the drywell cooling and ventilation system. It also did not consider the need for contamination control as a result of breaching the steam system. During the course of the SRV work, the licensee revised the job dose estimate twice more. The final job dose for the SRV work was 69.77 person-rem, or 55% higher than the initial revised job estimate of 45 person-rem. There were no changes to the job work scope or

Quad Cities Unit 1
(Refueling Outage Q1R16)

Job	Estimated Dose (Person-rem)	1.5 times Estimated Dose (Person-rem)	Actual Dose (Person-rem)
Replacement of Safety Relief Valves	45	67.5	69.77

Dose overrun for SRV replacement job attributed to the following factors:

- **Heat stress which reduced worker stay times, thereby impacting worker efficiency**
- **Rework due to worker inexperience**
- **Contamination control which required additional RP technician coverage**

Table 2
Quad Cities Job Doses

radiation levels following the licensee's revised job dose estimate of 45 person-rem and therefore the inspectors did not consider the subsequent job dose revisions when analyzing this job for significance using the SDP.

The worker heat stress was the major contributor to the job dose overrun and was a result of the drywell cooling and ventilation system being out of service for planned maintenance and testing. Although the licensee had planned for the drywell cooling and ventilation system to be out of service during the early part of the outage when the SRV replacement work was to be performed, the licensee had no contingency plans to provide backup or auxiliary cooling or ventilation to the drywell. Consequently, worker heat stress resulted in worker stay times being limited to approximately 35 minutes, thus reducing worker efficiency.

Using the ALARA SDP, the actual job dose of 69.77 person-rem for this finding exceeded 25 person-rem and the 3-year rolling average collective dose for Quad Cities of 269 person-rem/unit exceeded 240 person-rem/unit (BWR ALARA screening criterion for a BWR) but did not exceed the SDP BWR criterion of 600 person-rem/unit. Therefore, the inspector characterized the inspection finding for this job as a potential WHITE finding. The NRC scheduled a Regulatory Conference to meet with the Quad Cities licensee on February 13, 2001 to further discuss this issue. This meeting will be held at the NRC Region III offices in Lisle, Illinois.

One can gain insight into how the revised ALARA process works by comparing the outcomes of the recent inspection findings at Callaway and Quad Cities. As stated earlier, 10 CFR 20.1101(b) requires that a licensee "use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA)." According to the Statement of Considerations for this requirement, "compliance will be judged on whether the licensee has incorporated measures to track and, if necessary, to reduce exposures and not whether exposures and doses represent an absolute minimum or whether the licensee has used all possible methods to reduce exposures."

The Callaway outage inspection resulted in six separate ALARA inspection findings. Each of these six ALARA inspection findings, by definition, involved a job dose which exceeded the estimated job dose by more than 50%, indicating a failure to adequately track and maintain doses ALARA. The Callaway inspection identified performance deficiencies in several areas. The licensee appeared to schedule outage activities to reduce the duration of the outage rather than to reduce dose. The licensee did not exercise proper ALARA controls on several jobs. The licensee failed to properly train workers in dose reduction methods and failed to ensure good communications between radiation protection personnel and other work groups. These performance deficiencies are indicative of the licensee's failure to use procedures and engineering controls to achieve occupational doses which are ALARA. As stated earlier, the six ALARA findings were assessed as three WHITE findings, thus putting Callaway in the Degraded Cornerstone band of the Action Matrix. Callaway was also given a Notice of Violation.

The Quad Cities inspection resulted in a single ALARA inspection finding which was assessed as a potential single WHITE finding. A single WHITE finding would put Quad Cities in the Regulatory Response band of the Action Matrix. Although the licensee encountered much higher shutdown dose rates in the drywell than they had estimated during the ALARA planning for the outage, prior to initiating the job, the licensee re-estimated the job doses based on the

elevated source term. The staff's position is that it is acceptable to modify job dose estimates if there are unexpected changes to the work scope or radiation levels. Although the Quad Cities licensee did reevaluate the job dose estimates to account for the unexpected jump in the source term, the licensee failed to account for reduced worker efficiency due to heat stress and worker inexperience in the revised dose estimates. Reduced worker efficiency due to heat stress and worker inexperience were the two main factors which contributed to the job dose exceeding its revised estimate.

Conclusion

The revised Reactor Oversight Process was fully implemented at all nuclear power plants on April 1, 2000. Since then, the NRC has conducted at least partial inspections under this revised process at all plants. During this time period, the NRC has modified certain aspects of the Reactor Oversight Process based on several implementation issues raised by these inspections. In January 2001, the NRC established a focus group to evaluate the findings made during the first year of implementation of the Reactor Oversight Process. In addition, the NRC will meet with its stakeholders in March 2001 to discuss industry's lessons learned from implementation of the Reactor Oversight Process and will solicit possible revisions to the process.

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Note: All references listed above are available at the NRC web site http://www.nrc.gov or through the NRC Public Document Room.