

APPENDIX E

EXAMPLES OF MINOR ISSUES AND CROSS-CUTTING ASPECTS

The examples in this appendix are meant as an aid to determine whether or not the finding is minor and whether the finding contains possible cross-cutting aspects. Use of this appendix is based on the judgement of the inspector who identified the finding, the regional management involved and the circumstances associated with the finding.

As discussed in MC 0612, Section 06.03.c (5), if the cause(s) of a finding reflects recent performance and is directly related to Problem Identification and Resolution or Human Performance, then the reflected performance is a cross-cutting aspect of the finding.

In general, cross-cutting aspects of the Human Performance area can be broken down into three attributes—whether the cause can be attributable to: 1) personnel; 2) resources; or 3) organization. Problem identification and resolution cross-cutting aspects can also be broken down into three attributes—whether the cause can be attributable to: 1) identification; 2) evaluation; or 3) corrective action. These attributes are further defined as follows:

Human Performance:

- Personnel - Attributes required for successful task performance including: fitness for duty, knowledge and skills, attention to detail (including failure to follow procedures)
- Resources - Items that support the task performance such as complete and accurate procedures, complete and accurate reference documents, appropriate tools, equipment, supervision, and staff.
- Organization - Items that facilitate performance such as effective written and verbal communications, inter and intra-group coordination, planning and scheduling.

Problem Identification and Resolution:

- Identification - Issues are self-identified at the appropriate threshold and are being entered into the corrective action program.
- Evaluation - Corrective actions are commensurate with the significance of the issue including adequate extent of condition.
- Corrective Action - Immediate disposition, short-term, and long-term corrective actions are appropriate and effective.

Although the “cross-cutting” example questions in this Appendix provide an aid to inspectors in determining whether a finding has either Human Performance or Problem Identification and Resolution aspects, the above attributes should also be used as a guide to determine the existence of cross-cutting aspects. In the report, as discussed in MC 0612, Section 06.03.c (5), the inspector is to “describe the cross-cutting aspects of the finding in the analysis paragraph. The inspector should use the content of the above attributes, not the attribute itself, to document cross-cutting aspects.”

Minor issues and violations are below the significance of that associated with Green SDP findings and are not the subject of formal enforcement action or documentation in NRC inspection reports. Failures to implement requirements that have insignificant safety or regulatory impact should normally be categorized as minor. While licensees must correct minor violations, minor violations or other minor findings **do not normally warrant documentation** in NRC inspection reports or inspection records and **do not warrant enforcement action**.

NRC Inspection Manual Chapter 0612 Appendix B, "Issue Screening," provides guidance for determining if a finding should be documented and whether the finding can be analyzed using an SDP. When determining whether identified issues can be considered minor, inspectors should compare the issue to the following examples.

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1. Record Keeping Issues

Example a. Post-maintenance testing was performed on ten glycol air handling units during an outage of a Westinghouse ice condenser facility. All the required tests were performed, based on statements from licensee workers, but there was no record that an actual air flow test was conducted on two of the units. Based on indication in the control room, both air handling units had comparable air flow to those that had documented test results, and the ice condenser technical specification required air temperatures were all well-within specification.

The violation: 10 CFR 50, Appendix B, Criterion XI or the licensee's procedures require test results to be documented and evaluated to assure that test requirements are satisfied.

Minor because: This was a record keeping issue of low significance. There was reasonable assurance that test requirements were met as evidenced by actual air flow being satisfactory and technical specification temperatures being within limits.

Not minor if: The air flow was determined to be degraded during subsequent testing.

Cross-cutting: Human performance aspects involving documentation of safety related activities by maintenance personnel. |

Example b. In a records storage vault, the licensee observes a ceiling leak. Temporary containers were used to collect water during rainstorms. This "work around" was entered for resolution in the licensee's corrective action program. The condition continued for a year. The containers overflowed during a heavy weekend rainstorm when no one was available to monitor the containers and some safety-related records were damaged, but were still readable. |

The violation: The licensee failure to correct the water intrusion problem in a prompt manner which resulted in damage to records violated the 10 CFR 50.71 requirement to maintain certain records.

Minor because: This was a failure to implement a corrective action that had no safety impact because no records were lost.

Not minor if: Required records were irretrievably lost.

Cross-cutting: PI&R aspects involving the failure of records personnel to correct degraded conditions in a timely manner. |

Example c. The licensee's surveillance test records were not complete for a safety-related pump because the operators skipped a page of the surveillance procedure and failed to record one section of the test.

The violation: The surveillance test is required by Technical Specifications.

Minor because: The surveillance test was performed, but not completely documented. The portion of the test documented and the last completed surveillance test revealed that the equipment performed its' safety function.

Not minor if: The subsequent surveillance test showed that the equipment would not perform some safety-related function.

Cross-cutting: Human performance aspects involving documentation of safety related activities by operations personnel.

Example d. An inspector found that a licensee was missing area radiation survey records or weekly area contamination (smear) records.

The violation: Area radiation surveys and contamination surveys are required by license conditions or 10 CFR 20.2103.

Minor because: The record of the survey is missing, but the survey was actually performed. No unexpected contamination or exposure resulted from the violation.

Not minor if: An unexpected contamination or exposure resulted from the violation.

Cross-cutting: No obvious cross-cutting aspect. Would have human performance aspects involving the proper handling of records by radiation protection personnel if an individual had improperly disposed or filed records.

2. Licensee Administrative Requirement/Limit Issues

Example a. While performing a review of a completed surveillance test, the system engineer determines that operators performing the test had made a calculation error when determining the leak rate of a power-operated relief valve's nitrogen accumulators. When calculated correctly, the actual check valve leakage exceeded the surveillance leakage rate's acceptance criterion in the surveillance procedures (but not the Technical Specifications surveillance requirement). The surveillance had been completed a week earlier and the system had been returned to service. The allowable leakage rate was below that used in the design assumptions for sizing of the accumulators and it was determined that with the

identified leakage, the valves would be able to perform the required number of strokes assumed in the accident analysis.

The violation: The Technical Specification surveillance test's allowable check valve leakage rates were exceeded and the system was returned to service.

Minor because: The limit exceeded was an administrative limit. Actual check valve leakage rates, based on testing history, have always been significantly low enough to meet the required number of valve strokes.

Not minor if: Maintenance records indicated that historical check valve leakage rates were too high bringing the ability of the valves to meet the required number of valve strokes into question or Technical Specification limits were exceeded.

Cross-cutting: Human performance aspects involving inattention to detail by operations personnel.

Example b. NRC inspectors identified that a high radiation door was not locked as required by plant procedures. While the licensee's procedurally controlled administrative limit for area postings was exceeded, the door to the area was conservatively classified and did not exceed regulatory radiation levels to warrant posting as a locked high radiation area.

The violation: Site procedures require activities to be accomplished in accordance with procedures.

Minor because: The requirement was a licensee administrative limit. The area was conservatively posted and no regulatory limits requiring posting were exceeded.

Not minor if: The area radiation levels exceeded the limits such that the area should have been a locked high radiation area or the radiation levels in the area were changing rapidly due to power changes or system operation such radiation levels at which the door would be required to be locked could be reached.

Cross-cutting: No obvious cross-cutting issue. Could have human performance aspects involving radiation protection personnel if the licensee was aware of the higher radiation levels and failed to properly control access.

Example c. During a refueling outage, the licensee tested a charging pump at full flow conditions as required every 18 months. Vibration data taken during this test indicated vibration of 0.324 inches per second (ips), which exceeded the test procedure Alert range of 0.320 ips.

The procedure required the surveillance frequency to be increased to every nine months after exceeding the Alert range. The licensee failed to identify that the test result exceeded the Alert range, so the test frequency was not increased. Subsequent vibration testing revealed no further vibration degradation. The ASME Code acceptance criterion for vibration measurements was 0.325 ips.

The violation: Criterion XI or the licensee's procedures require that test procedures shall incorporate acceptance limits established by design documents. Measured vibration data exceeded the test procedure alert levels and the additional testing was not performed.

Minor because: This limit was a licensee administrative limit. The ASME Code limit was not exceeded and there was no subsequent degradation of vibration of the pump.

Not minor if: Subsequent vibration tests revealed degradation into the action range, the same issue affected a number of pumps tested, or the issue was repetitive.

Cross-cutting: PI&R cross-cutting aspects involving the failure of engineering personnel to identify and correct degraded conditions. Also could be a human performance error (inattention to detail) depending on the exact cause of why the pump degradation was missed.

Example d. The licensee missed an hourly update of a state agency during a declared Unusual Event because of an oversight by the Shift Manager.

The violation: 10 CFR 50.54(q) requires that licensees follow their emergency plan and the plan committed the licensee to hourly updates of state agencies during declared emergencies.

Minor because: There is no regulatory requirement to make this update, there was no impact on public health and safety, and it did not detract significantly from the state agency's ability to function during the emergency.

Not minor if: There was a failure to make required initial notifications, a significant breakdown in communication functions committed to in the emergency plan, or a failure that affected the agency's ability to respond to the emergency.

Cross-cutting: Human performance aspects involving inattention to detail on the part of emergency response personnel.

Example e. During an inspection of silicon foam penetration seals, an inspector noted that foam extrusion (3/8 inch) from repaired seals was less than the amount specified in the seal repair procedure (1/2 inch).

However, the silicon foam vendor's instructions permit extrusions as little as 1/4 inch.

The violation:	The seal repair was not performed in accordance with the licensee's procedure.
Minor because:	This is a violation of a licensee administrative requirement. Because the extrusions met the vendor's instruction's limits, no regulatory limit was violated.
Not minor if:	Both the licensee and vendor procedures were violated such that the condition would have impacted the ability of the seal to perform its function.
Cross-cutting:	Human performance aspects involving the completion of maintenance activities. Depending on the adequacy of procedures, this issue could have human performance aspects involving the use of plant procedures. Could involve PI&R aspects if engineering personnel failed to identify the degraded condition during plant walkdowns.
Example f.	The licensee's procedure required that heat tracing be energized in the diesel fire pump room from September 30 to April 30. In December, an inspector observed that the heat tracing was de-energized. The room temperature was 68 degrees, maintained by the steam boiler (50 degrees was the minimum temperature for operations). The temperature of the room was monitored and annunciated in the control room. An annunciator response procedure instructs the operator to check heat tracing if the room temperature alarms were received. The inspector verified that the temperature in the room had not dropped below 50 degrees since September 30.
The violation:	A licensee procedural requirement was not met.
Minor because:	This is a failure to implement a procedural requirement that had no safety impact under the given situation. The temperature had not dropped below the minimum temperature for operations.
Not minor if:	The annunciator was inoperable or the room temperature fell below 50 degrees.
Cross-cutting:	Human performance aspects involving the failure of operations personnel to follow procedures.
Example g.	An operating procedure requires the shift supervisor to advise the station manager prior to making any mode changes. A mode change is made without this notification due to an oversight by the shift supervisor.

The violation: The licensee is required to follow their procedures per Technical Specification 6.8.1, if applicable.

Minor because: This is a minor procedural error that had no impact on safety equipment and caused no safety consequences. All requirements for the mode change were met except this notification.

Not minor if: A mode change was made without all required equipment being operable.

Cross-cutting: Human performance aspects involving inattention to detail by operations personnel.

Example h. The NRC requires licensees to maintain the total effective dose equivalent (TEDE) to five rem per year. The licensee established by procedure an administrative limit of 2 rem per year. Radiation protection manager or general manager approval was required for any individual to exceed the procedural limit. Contrary to the licensee's program, a technician received 2.7 rem in one year without approval from the radiation safety officer because the technician, the technician's supervisor and the HP personnel failed to notice that the technician had exceeded the administrative limit.

The violation: The licensee is required to follow their procedures per license conditions.

Minor because: This was an licensee administrative limit. The worker was within federal limits.

Not minor if: Multiple examples were identified of failures to satisfy station radiation protection procedures indicating a failure to maintain and implement programs to keep exposures as low as reasonably achievable.

Cross-cutting: PI&R aspects involving the failure of various station personnel to detect and address a violation of licensee's administrative limits.

3. Non-significant Dimensional, Time, Calculation, or Drawing Discrepancies

Example a. A temporary modification was installed on one of two redundant component cooling water system surge tanks to restore seismic qualification. The supporting calculations did not receive a second-level review due to engineers failing to adhere to licensee's requirements on review of calculations. The calculations were found to contain technical errors that did not result in the train being inoperable.

The violation:	10 CFR 50, Appendix B, Criterion III design control measures for verifying the adequacy of design were not implemented. Design changes are required to be subjected to design control measures commensurate with those applied to the original design.	
Minor because:	These are non-significant calculation errors. The calculation errors were minor and the installed modification restored seismic qualification of the tank.	
Not minor if:	The calculation errors were significant enough that the modification required revision or rework to correctly resolve seismic concerns.	
Cross-cutting:	Human performance aspects involving inattention to detail during the preparation of calculations by engineering personnel.	
Example b.	A controlled design drawing shows a plug valve where a ball valve is actually installed. This deficiency occurred because of an oversight by the licensee. The valve design was changed to a ball valve but the licensee failed to update the drawing.	
The violation:	The design is required to be correctly translated into drawings.	
Minor because:	This is a non-significant drawing deficiency.	
Not minor if:	Operation of the system was adversely affected by the difference in valves.	
Cross-cutting:	Human performance aspects involving inattention to detail by the engineers after a change to a different type of valve than was originally planned was approved.	
Example c.	A licensee procedure required that all valves specified on a locked valve list be indicated as locked on the plant drawings. Inspectors identified safety-related valves on the locked valve list that were not indicated as locked on the plant drawings. All valves on the locked valve list were properly positioned and locked, as determined by field verification.	
The violation:	Activities were not performed in accordance with procedures.	
Minor because:	This is a non-significant drawing discrepancy. All valves required to be locked were locked and properly positioned.	
Not minor if:	More than one valve was in the required position, but not locked.	
Cross-cutting:	Human performance aspects involving inattention to detail during the positioning of plant equipment by operations personnel.	

Example d. The technical specification required a primary sample to be taken and analyzed within two hours of a power change in excess of 20 percent. The inspector found that the chemistry sample was taken and analyzed within 2 hours and 35 minutes after a recent power increase from 60 to 85 percent. The sample was within specification requirements.

The violation: The technical specification was violated.

Minor because: This is a failure to implement a requirement that has no safety impact. The sample delay was not significant.

Not minor if: The sample had not been conducted or was delayed to the extent that the sample results were not reliable.

| Cross-cutting: Human performance aspects involving inadequate implementation
| of Technical Specification requirements by operations personnel.

Example e. An inspector found that the radiological survey instruments were beyond the required calibration frequency. The instruments were actually in calibration tolerance (when later checked).

The violation: The licensee is required to calibrate radiological survey instruments at specified intervals.

Minor because: This is a failure to calibrate the survey instruments that has no safety impact because the instruments were actually in tolerance.

Not minor if: The instruments were out of calibration tolerance, resulting in a lack of reasonable assurance that the surveys performed were representative of the actual radiological conditions.

| Cross-cutting: Human performance aspects involving inattention to detail during
| the use of survey instruments by radiation protection personnel.

Example f. An inspector noted that the radiation protection training for a worker was not completed as required due to licensee personnel failing to conduct the periodic training which was scheduled. The training was not conducted because the licensee failed to notify the instructor of the scheduled training.

The violation: The licensee is required to provide radiation protection training to workers through their radiation protection program procedures.

Minor because: The periodic training was not performed, but the initial training had been performed and training had been scheduled. There was no actual consequence from the radioactive material shipments.

Not minor if:	An actual consequence occurred that was attributed to the lack of training.	
Cross-cutting:	Human performance aspects involving effective communication and inter-group communication.	
Example g.	During construction of a safety-related concrete wall, a licensee quality control inspector observed that an imbedded Richmond insert is cocked at an angle of 6 degrees. The specification required plus-or-minus 3 degrees. The licensee discovered that the worker who placed the insert failed to use a level as required. For reasons unknown, the condition report was closed without implementing corrective actions. Subsequent to this incident, the same worker mis-oriented three other inserts. All of the inserts were later abandoned in place.	
The violation:	The condition adverse to quality was not corrected and it recurred.	
Minor because:	These mis-oriented inserts represent a failure to implement a corrective action that has no safety impact. It had no direct safety impact because the out-of-specification inserts were abandoned in place.	
Not minor if:	A safety-related attachment had been made to an out-of-specification insert and placed in service.	
Cross-cutting:	Although this example has human performance cross-cutting aspects, the PI&R cross-cutting aspects are more significant and related to the cause of the performance deficiency and violation. PI&R aspects involving the failure of engineering and maintenance personnel to take actions to correct nonconforming conditions.	
Example h.	The licensee's security fence is required to be 12 feet tall. The NRC discovers that, in one section, the fence is only 11 feet 10 ½ inches tall.	
The violation:	A license condition requires that the licensee meet their Physical Security Plan, which states that the security fence is required to be 12 feet tall.	
Minor because:	This is not a significant dimensional discrepancy.	
Not minor if:	The fence was significantly shorter (e.g. 11 feet).	
Cross-cutting:	No obvious cross-cutting aspects.	
Example i.	The FSAR states the volume of the refueling water storage tank is 250,000 gallons. The actual volume is 248,000 gallons.	

The violation: The facility was not consistent with the FSAR.

Minor because: This is a non-significant dimensional discrepancy.

Not minor if: The accident analysis assumed 250,000 gallons of useable volume above the suction point and the actual volume required accident analysis calculations to be re-performed to assure the accident analysis requirements were met.

Cross-cutting: No obvious cross-cutting aspects.

Example j. The licensee used a non conservative value for condensate storage tank temperature as an input to an accident analysis calculation. The value used was 118 degrees Fahrenheit where the actual value can be as high as 120 degrees Fahrenheit. As a result of this error, there was a slight reduction in the net positive suction head available to the safety injection pumps under accident conditions. The reduction was only a few percent of the available margin. No other similar concerns were identified and there were no programmatic concerns identified with this issue that could lead to worse errors if uncorrected.

The violation: 10 CFR 50, Appendix B, Criterion III design control measures for verifying the adequacy of design were not implemented. Design changes are required to be subjected to design control measures commensurate with those applied to the original design.

Minor because: This was a non significant calculation error that had minimal effect on the outcome of the calculation and there were no programmatic concerns identified associated with the issue that could lead to worse errors if uncorrected.

Not minor: If the temperature used was significantly less, if the existing margin was already low and as a consequence the error resulted in a significant reduction in margin in the calculation output, or if significant programmatic deficiencies were identified with the issue that could lead to worse errors if uncorrected.

Cross-cutting: No obvious cross-cutting aspects.

Example k. In its analysis to support a safe shutdown of the plant from the alternate control panel, the licensee assumed operators could complete the required tasks in ten minutes, when in fact, completing the required tasks could take as long as eleven minutes. The outcome of the licensee's analysis was unaffected, as up to 30 minutes of time was allowable to complete these actions. No other similar concerns were identified and there were no programmatic concerns identified with this issue that could lead to worse errors if uncorrected.

The violation:	10 CFR 50, Appendix B, Criterion III design control measures for verifying the adequacy of design were not implemented. Design changes are required to be subjected to design control measures commensurate with those applied to the original design.
Minor because:	This was a non significant calculation error that had minimal effect on the outcome of the calculation and there were no programmatic concerns identified associated with the issue that could lead to worse errors if uncorrected..
Not minor:	If the error was more significant (e.g. 20 minutes), if the existing margin was already low and as a consequence the error resulted in a significant reduction in the remaining margin, or if significant programmatic deficiencies were identified with the issue that could lead to worse errors if uncorrected.
Cross-cutting:	No obvious cross-cutting aspects.

Note: The intent behind examples “j” and “h” is to illustrate that equipment inoperability is not a prerequisite to an issue being more than minor. Rather, the nature of the performance deficiency, the impact on the results of the analysis, the uniqueness of the issue, the potential impact under different but similar conditions, and the amount of existing margin are all factors to consider when deciding whether a design issue should be classified as more than minor.

4. Insignificant Procedural Errors

Example a.	A scaffold erected between safety-related plant service water strainers was wedged tightly between the system piping. Licensee procedures required an engineering evaluation be performed for all scaffolding located above or near safety-related equipment. No engineering evaluation was performed to assess the seismic impact of the scaffold. A later engineering evaluation determined that there is no safety concern.
The violation:	10 CFR 50, Appendix B, Criterion V requires that activities affecting quality shall be performed in accordance with procedures.
Minor because:	This is a procedural error that has no safety impact.
Not minor if:	The licensee routinely failed to perform engineering evaluations on similar issues, or if the later evaluation determined that safety-related equipment was adversely affected.
Cross-cutting:	Human performance aspects involving the failure of maintenance workers to follow procedures for scaffold installation.
Example b.	While performing a reactor protection procedure, an operator inadvertently operated the bypass switch which caused a single

channel trip condition. The operator failed to follow the procedure and adequately self-check to ensure the right switch was manipulated.

The violation: 10 CFR 50, Appendix B, Criterion V requires that activities be accomplished in accordance with procedures.

Minor because: This was an insignificant procedural error and there were no safety consequences.

Not minor if: The error caused a reactor trip or other transient.

Cross-cutting: Human performance aspects involving inadequate self checking by operations personnel and failure to follow procedure.

Example c. A valve motor operator was test wired for reading operating current during testing required by Generic Letter 89-10. The valve was successfully cycled, the data recorded and determined to be within the acceptable range, and the valve was returned to service. However, the ammeter used a 0-100 amp scale instead of a 0-10 amp scale as required by the procedure. Subsequent retest with the proper meter resulted in satisfactory amperage readings.

The violation: The test procedure was not followed.

Minor because: This was a procedural error that had no impact on safety equipment. The mistake did not result in an actual equipment problem.

Not minor if: The retest revealed that the data was actually outside of the acceptable range.

Cross-cutting: Human performance aspects involving inattention to detail by maintenance personnel during the selection of measuring and test equipment. Could also involve human performance aspects involving the failure to follow maintenance procedures by maintenance personnel.

Example d. During a review of the lighting in the safety injection pump room, an inspector-identified that the lighting was less than FSAR design levels for operator action. The licensee informed the inspector that this condition was previously identified. However, the corrective action to increase the lighting was given a low priority and was not completed in the two years since initial identification. Interviews with operators revealed that some had difficulties conducting surveillance or emergency drills without the use of flashlights in the pump room.

The violation:	The licensee failed to take prompt corrective action for a condition adverse to quality.	
Minor because:	This is a failure to implement a corrective action that has no safety impact. Operators are procedurally required to carry flashlights and had no problems functioning in this light condition as evidenced by the lack of operational errors due to poor lighting.	
Not minor if:	The degraded lighting condition contributed to an operator error or was shown to significantly impact the operator's ability to do the task.	
Cross-cutting:	PI&R aspects involving the failure of engineering personnel to correct degraded conditions in a timely manner commensurate with safety significance.	
Example e.	The inspector-identified a valve with a missing name-plate, a violation of plant procedures requiring that all equipment be labeled. Discussions with operators revealed that this condition had existed for several years, but because operators routinely referred to the plant drawings, even though the valve was routinely operated, the missing name-plate had no safety consequences.	
The violation:	Plant procedures required that equipment be labeled.	
Minor because:	This is a failure to meet procedural requirements that had no safety impact. The operators used the drawings and had no trouble identifying the valve location.	
Not minor if:	Improper valve manipulation occurred due to the missing name-plate.	
Cross-cutting:	PI&R aspects involving the failure of operations personnel to identify degraded conditions.	
Example f.	A small leak occurs on a welded connection in the diesel generator day tank causing a slow drip of fuel oil onto the floor in the diesel room. Maintenance used a sealant to temporarily repair the leak and wrote a work order for a permanent repair, which was scheduled for the next outage. Later, the seal failed and additional leakage occurred, which soaked a safety-related solenoid. The licensee subsequently determined that the wrong sealant was used in the temporary repair.	
The violation:	The licensee failed to adequately correct a condition adverse to quality.	

Minor because: This is a failure to implement a corrective action that had no safety impact because the problem did not affect the operability of the diesel generator.

Not minor if: The damage to the solenoid affected diesel operability or caused a fire hazard.

Cross-cutting: Human performance aspects involving the improper completion of activities by maintenance personnel. (failure to follow procedure, inadequate review of materials). Could also have PI&R aspects involving the failure to correct a degraded condition by engineering personnel (selection of wrong sealant).

Example g. The reach rod for a safety-related valve was jammed and could not be used. However, the valve could be operated manually one level down. This condition existed for two years and, despite complaints from the operators, it was not fixed. The NRC inspector noted that this work-around cost about one minute in operator response time and recognized that manual manipulation of this valve was required by certain off-normal procedures. The valve was accessible during all these off-normal events.

The violation: The licensee failed to identify and correct a condition adverse to quality as required by 10 CFR 50, Appendix B, Criterion XVI.

Minor because: This is a failure to implement a corrective action that had little to no safety impact. The valve could still be operated and the extra time requirement would not affect recovery operations.

Not minor if: There were occasions where access to the valve would be restricted for environmental reasons (heat, radiation, oxygen).

Cross-cutting: PI&R aspects involving the failure of operations and maintenance personnel to correct degraded conditions in a timely manner.

Example h. An inspector discovered that 3 of 150 emergency response organization members who are on the duty roster in different functional areas were not current in their training. The licensee's emergency plan required that all members be trained annually.

The violation: 10 CFR 50.54(q) requires that the licensee follow and maintain in effect emergency plans. The plan was not followed.

Minor because: There are others on the duty roster in each functional area whose qualifications are current.

Not minor if: Emergency response personnel qualification lapses are wide spread or occur in such a manner that positions cannot be staffed by qualified individuals.

Cross-cutting:	No obvious cross-cutting aspects.	
Example i.	An inspector found out of calibration survey instruments or less than the required number of instruments in storage cabinets in emergency facilities.	
The violation:	10 CFR 50.54(q) requires that the licensee follow the emergency plan. The emergency plan requires that calibrated survey instrumentation at set quantities be available.	
Minor because:	There are other instruments readily available and the emergency preparedness procedures require the calibration to be verified prior to use.	
Not minor if:	The failure was wide spread or timely response of a function was compromised.	
Cross-cutting:	No obvious cross-cutting aspects.	
Example j.	An inspector found that the evaluation of the adequacy of emergency preparedness procedures in the annual audit was not in sufficient depth in one functional area. The licensee reviewed the areas not covered and found no problems.	
The violation:	10 CFR 50.54(t) requires that the audit be conducted and that it contain the evaluation of the adequacy of EP procedures.	
Minor because:	No problems were identified and the revisions of the procedures that were not audited addressed improvements identified in drills.	
Not minor if:	The procedures that were not evaluated were in a condition that would effect the licensee's response to an emergency.	
Cross-cutting:	No obvious cross-cutting aspects. However, further information that supports an inadequate self-assessment process (as opposed to an isolated example) as the cause of the performance deficiency would support a PI&R cross-cutting aspect. Self-assessment is part of PI&R and should identify problems.	
Example k.	NRC Inspectors identified three ten-foot lengths of wood left from a scaffold disassembled the previous week, in the auxiliary feedwater pump room. The licensee had not completed an engineering evaluation approving this temporary storage location for transient combustible materials as required by the fire protection plan.	
The violation:	These transient combustible materials were not reflected in the fire hazards analysis and the licensee failed to complete the required engineering evaluation.	

Minor because: This is a failure to implement a fire protection plan requirement that has little or no safety impact. The licensee was able to show that the transient combustibles were well below the fire hazards analysis limits.

Not minor if: The fire loading was not within the fire hazard analysis limits.

Cross-cutting: Human performance aspects involving the adequacy of activities by maintenance personnel (failure to follow procedures or failure to self check).

Example l. The technical specifications required that one-third of all safety-related molded case circuit breakers be tested each refueling outage (such that all are tested every three outages) and that the instantaneous trip currents be recorded for trending purposes. The NRC inspector found that two outages ago during testing, the instantaneous trip current for a breaker was not tested due to the breaker not being listed for the instantaneous trip current test. The last recorded trip current for this breaker was five outages ago. The subject breaker was subsequently found to be in specification.

The violation: The technical specification is violated, because all required tests were not performed on the breaker within three outages.

Minor because: This is a failure to implement a procedural requirement that has no safety impact. All other tests on the breaker were satisfactory at the time of testing and the trip was subsequently found to be in specification.

Not minor if: The subject breaker was out of specification.

Cross-cutting: Human performance aspects involving maintenance scheduling personnel's inattention to detail.

Example m. The technical specifications require that 10 percent of all safety-related snubbers be tested each refueling outage and that if one failure occurs, an additional 10 percent sample be tested during the same outage. One snubber in the original population of 17 snubbers (there are a total of 168 snubbers) fails, necessitating an additional sample of 17 snubbers. However, because of an oversight by the licensee, only 16 additional snubbers are tested with no failures.

The violation: The technical specification was violated because the required number of snubbers were not tested.

Minor because: This is a failure to implement a procedural requirement that has no safety impact since none of the additional snubbers tested failed.

Not minor if:	A failure had occurred in the additional sample, necessitating yet another expansion of the sample, and this was not accomplished.	
Cross-cutting:	Human performance aspects involving the failure of maintenance personnel to follow procedures.	
Example n.	An inspector discovered a small pile of low level radioactive material in the radwaste building that was not properly posted. This problem occurred because of an oversight by the licensee.	
The violation:	The material should be posted as per 10 CFR 20.1902.	
Minor because:	This is a small area with low level radioactive material and access was restricted by a fence around the area. Other areas were sufficiently posted.	
Not minor if:	Other areas were also not posted or the radioactive material presented an accessible hazard.	
Cross-cutting:	Human performance aspects involving inattention to detail by radiation protection personnel.	

5. Work in Progress Findings

Example a.	Prior to system restoration following a modification, the licensee determined that the modification package that replaced the spent fuel pool cooling system suction piping did not include the siphon hole called for by the original system design because the engineers failed to realize that the requirements of the original design. The siphon hole was not installed. Due to the location of the piping, a siphoning event would lower spent fuel pool level below the point allowed in Technical Specifications but not to the point where fuel would have been uncovered.	
The violation:	The pipe design was not correctly translated into work instructions and drawings.	
Minor because:	This was work in progress. The error was identified and corrected during turnover of the modification prior to system restoration.	
Not minor if:	The system was returned to service without installation of the siphon hole or completion of an evaluation to remove the requirement for the siphon hole.	
Cross-cutting:	Human performance cross-cutting aspect of inattention to detail by omitting the original design requirement for a siphon hole by the engineering staff.	

Example b. During installation of a modification, the licensee failed to follow the installation procedures and a check valve is installed backward. Quality control did not find the error. During a post-modification test, prior to returning the system to service, the licensee discovered the problem.

The violation: The licensee failed to correctly translate the design to the as-built configuration.

Minor because: It is work in progress and there is no safety consequences.

Not minor if: The system was returned to service.

Cross-cutting: Human performance aspects involving the failure of maintenance personnel to follow procedures. Additionally, could also be a PI&R cross-cutting aspect for the Quality Control personnel failure to detect a check valve which was installed backwards. Which cross-cutting aspect is used depends on the performance deficiency of violation cited and what cross-cutting aspect was the stronger contributor to the cause of the issue.

Example c. A solenoid that did not meet the specification was screened through receipt inspection and placed in the warehouse. When the solenoid was withdrawn to be installed, an electrician noted that it was not the correct type.

The violation: The licensee is supposed to establish controls to prevent nonconforming parts from being used inadvertently and the wrong part could have been installed.

Minor because: It was work in progress and no adverse consequences resulted.

Not minor if: The valve was installed and the system returned to service.

Cross-cutting: Human performance aspects involving inattention to detail by receipt inspection personnel.

6. ALARA Planning or Work Controls Issues

Example a. While reviewing the ALARA planning packages for the previous outage, the inspector finds that the actual collective dose received to complete a work activity (i.e., hanging temporary shielding to support ISI work) was 12.5 person-rem as opposed to the 10 person-rem estimated in the planning process.

The issue: The dose that the licensee determined was ALARA for this work activity was not achieved.

Minor because: The actual dose achieved did not exceed the planned, intended dose (i.e., estimated collective dose planned for) by more than 50 percent. This 50 percent criteria represents the NRC's expectation of reasonably achievable precision in the ALARA planning process.

Not minor if: The planned, intended collective dose for this work activity is unjustifiably higher than industry norms, or the licensee's past experience, for this (or similar) work activity.

Cross-cutting: No obvious cross-cutting aspects. This issue could have cross-cutting aspects if the extra dose was due to performance errors.

Example b. While reviewing the collective dose results for work activities completed in the previous refueling outage, the inspector finds a work activity where the actual collective exceeds the planned, intended dose by 50 percent but is not greater than five person-rem

The issue: The dose that the licensee determined was ALARA for this work activity was not achieved.

Minor because: Although the resulting dose is outside the expectation for ALARA planning precision, a five person-rem work activity is not a significant contribution to the overall ALARA performance.

Not minor if: If several such issues are identified and it appears that the licensee has arbitrarily divided up the radiological work into very small "work activities" for the purpose of avoiding inspection findings.

Cross-cutting: No obvious cross-cutting aspects. This issue could have cross-cutting aspects if the extra dose was due to performance errors.

7. Maintenance Rule Issues

Example a. Violations of Paragraph 10 CFR 50.65(a)(1): Violations of (a)(1) are for failing to set goals and monitor, having goals that are not commensurate with safety, failing to take industry operating experience into account where practicable, or for inadequate corrective action when goals are not met. Violations of (a)(1) are almost never minor because licensees only carry MR SSCs in (a)(1) status when there have already been significant equipment problems. See Enforcement Manual Section 8.1.11 and IP 71111.13.

Example b. Violations of Paragraph 10CFR50.65(a)(2): Violations of (a)(2), failure to demonstrate effective control of performance or condition and not putting the affected SSC(s) in (a)(1), are not minor because they necessarily involve degraded SSC performance or

condition. See Enforcement Manual Section 8.1.11 and IP 71111.13.

Example c. Violations of 10 CFR 50.65(a)(3): Most 10 CFR 50.65(a)(3) violations, including failure to perform the periodic evaluation within the time requirements, will usually be minor unless they have other consequences such as equipment problems attributable to failure to take industry operating experience into account where practicable.

The inspectors identified that during an (a)(3) periodic evaluation, the licensee failed to include the system unavailability time during T/S required surveillance testing of the emergency diesel generators. Although the licensee conducts monthly EDG testing, the EDGs are unavailable to perform their intended safety function during T/S surveillance testing for a few minutes during each monthly test. The unavailability time due to surveillance testing was insignificant when compared against total unavailability such that the (a)(3) balancing was not affected.

The violation: The licensee failed to consider all unavailability when conducting the (a)(3) evaluation.

Minor if: The small contribution to unavailability due to the surveillance testing is insignificant when compared to total unavailability.

Not minor if: The contribution to unavailability due to surveillance testing was significant enough to affect the balancing determination.

Cross-cutting: No obvious cross-cutting aspects.

Example d. Violations of 10 CFR 50.65(b): The inspectors identified that the licensee had not included some components of the augmented off-gas system within the scope of its program for implementation of the Maintenance Rule. Failure of these components could result in a plant transient or scram for which vulnerability, they were required to be in scope by paragraph (b)(2) of the rule. However, the licensee was performing appropriate preventive maintenance and no equipment performance problems had been identified for the components in question.

The violation: The SSCs were not scoped within the maintenance rule as required by paragraph (b)(2) and if failures had occurred, they could have caused a transient or scram to an operating unit.

Minor because: This is a failure to implement a maintenance rule requirement that had no equipment performance implications in this example. Had the SSCs been scoped, the appropriate preventive maintenance being performed on the system would presumably be

demonstrating effective control of performance or condition (absent equipment problems) as provided in paragraph (a)(2) of the maintenance rule.

Not minor if: An actual failure had occurred causing a transient or if equipment performance problems were such that effective control of performance or condition through appropriate preventive maintenance under (a)(2) could not be demonstrated.

Cross-cutting: No obvious cross-cutting aspects. It could be a human performance cross-cutting aspect if the failure to scope was a personnel error.

Example e. In accordance with the guidance of IP 71111.13, the inspectors first reviewed the plant's maintenance risk assessment performed pursuant to 10 CFR 50.65(a)(4) for maintenance activities in progress and identified that the risk assessment was inadequate (i.e., it underestimated the risk because of personnel error) because (of one or more reasons including, but not limited to the following): (a) not all on-going maintenance activities affecting SSCs within the licensee's established (a)(4) scope had been taken into account, (b) one or more maintenance activities were taking longer than assumed in the risk assessment, (c) plant conditions or operations, including technical specifications requirements, were not consistent with the assumptions used in the risk assessment, and (d) any other relevant information provided to the risk assessment tool or process was inaccurate and/or incomplete...or the risk assessment tool or process was being employed in a manner inconsistent with its design, capabilities and limitations, e.g., more maintenance activities than the tool can model, plant conditions not modeled by the tool, etc.

The violation: Failure to perform an adequate risk assessment when required by 10 CFR 50.65(a)(4)

Note that inspectors are expected to review risk assessments for maintenance activities in progress first as they are the most risk significant. Then if no deficiencies are identified, risk assessments for planned, but not yet commenced maintenance activities are reviewed. However, if a risk assessment for a planned maintenance activity that has not yet been commenced (or the plant has not yet been reconfigured in support of that activity) is found to be inadequate and there are no other inadequately assessed conditions or other activities that would invalidate the existing maintenance risk assessment, then the inadequacy of the risk assessment for the planned, but not yet commenced, maintenance activity does NOT in itself constitute a violation of (a)(4). However, inadequate risk assessments for the planned, but not yet commenced maintenance activity can be a performance deficiency. The lowest maintenance risk assessment review priority is risk assessments for completed maintenance activities for which the associated plant configuration no longer exists. Deficiencies in such risk

assessments are treated the same as deficiencies in current risk assessments; even if reviewed at a lower priority.

Minor If: Overall elevated plant risk (when attributable at least in part to maintenance activities), computed in terms of incremental core damage probability (ICDP), (i.e., taking exposure time into account during the period of elevated, but not adequately assessed, core damage frequency (CDF)), when assessed correctly, is not greater than $1.0E-6$ - *or* - would not otherwise put the plant into a higher, licensee-established risk category or would not require risk management actions (RMAs) or additional RMAs under licensee procedures* - *and* - none of the conditions under Appendix B, Section 3, Items (5)(a) through (5)(h) apply.

More than Minor if: The elevated overall plant risk, as described above, when correctly assessed, is greater than $1.0E-6$ (ICDP) or would otherwise put the plant into a higher risk category or would require under plant procedures,* RMAs or additional RMAs - *or* - any of the conditions under Appendix B, Section 3, Items (5)(a) through (5)(h) applies.

Cross-cutting: Human performance cross-cutting aspect because the case of the inadequate risk assessment was due to a personnel error.

Example f. In accordance with the guidance of IP 71111.13, the inspectors first reviewed the plant's maintenance risk assessment for maintenance activities in progress required by 10 CFR 50.65(a)(4) and identified that a risk assessment had not been performed because of personnel error (or reperformed/ updated) when required, by one or more circumstances including, but not limited to the following: (a) prior to commencing maintenance activities or maintenance support activities that could increase plant risk (b) prior to change(s) in plant configuration, conditions, or operations that would invalidate the existing risk assessment, and (c) as soon as practicable after an emergent condition that would invalidate the existing risk assessment, not to interfere with immediate plant stabilization and restoration (unless the condition is fully corrected/plant restored before the risk assessment can reasonably be performed or updated).

The violation: Failure to perform a risk assessment when required by (a)(4)

Minor if: The elevated overall plant risk, as described above, when assessed correctly, is not greater than $1.0E-6$ (ICDP) or would otherwise not put the plant into a higher licensee-established risk category or would not require RMAs or additional RMAs under licensee procedures* - *and* - none of the conditions under Appendix B, Section 3, Items (5)(a) through (5)(h) apply.

Note that when no risk assessment has been performed at all, the risk deficit in terms of ICDP is equal to the entire amount by which the increase in plant risk (whenever the increase is attributable at least in part to maintenance activities) exceeds $1.0E-6$.

Not minor if: The elevated overall plant risk as described above, when correctly assessed, is greater than $1.0E-6$ (ICDP) or otherwise would put the plant into a higher risk category or would require, under plant procedures*, RMAs or additional RMAs risk management actions - or - any of the conditions under Appendix B, Section 3, Items (5)(a) through (5)(h) applies.

Cross-cutting: Human performance cross-cutting aspect because the case of the inadequate risk assessment was due to a personnel error. |

**Note that under certain circumstances, the inspector may identify RMAs that based on judgement, should be taken at the correctly assessed risk level, but would not be required at that risk level by licensee procedures. In such cases, in accordance with IP71111.13, management review is required for a more-than-minor determination, including consultation with the Maintenance Rule cognizant branch in NRR.*

Example g. In accordance with the guidance of IP 71111.13, the inspectors first reviewed the plant's maintenance risk assessment for maintenance activities in progress required by 10 CFR 50.65(a)(4) and determined that a risk assessment had been performed when required and was adequate. Upon inspection of the plant, the inspectors identified that one or more of the RMAs prescribed by the licensee had not been effectively implemented.

The violation: Failure to manage risk as required by 10 CFR 50.65(a)(4)

Minor if: All key safety functions are preserved and the increase in plant risk due to maintenance is less than or equal to the industry guidance threshold for taking risk management actions (i.e., $ICDP \leq 1.0E-6$).

Not minor if: Any key safety functions are lost or degraded or the increase in plant risk is greater than the industry guidance threshold for taking risk management actions (i.e., $ICDP > 1.0E-6$).

Cross-cutting: No obvious cross-cutting aspects. |