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Subject: [External_Sender] Industry"s Contemporary Examples of Minor Issues
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Attachments: Industry Examples of Minor and More.docx

Dave & Steve,

Thank you for the opportunity to provide industry's proposed examples of Minor Issues for possible incorporation into IMC 0612 Appendix E.

The attached file contains 8 examples in the areas of Internal Dose, Locked High Radiation Areas and Radioactive Waste Shipping that have been approved by the NEI Radiation Safety Task Force.

I will be happy to discuss any of these examples should you desire to do so.

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Industry Examples of Minor Issues

Internal Dose

1. At the beginning of the outage, a team of RP technicians, operators and engineers assembles to conduct a containment leak inspection. During the inspection, the team finds a leak that is suspected to be pressure boundary leakage. The technician and the team determine that they need to inspect the area. Based on the conditions in the area and environmental conditions, the team does not wear face shields. Upon exit from the containment, the team alarms the portal monitors, indicating low level contamination (all level 1 PCEs) and the whole-body counts were conducted. The results of the whole-body counts were less than 10 mrem internal.

   The Performance Deficiency: The licensee did not perform an adequate survey or implement engineering controls to minimize the unplanned uptake of radioactive material and personnel contamination event. In addition, the TEDE ALARA evaluation should have anticipated the situation and was not documented per site procedures.

   Minor because the actual dose to the individuals involved was < 10 mrem. (See basis below).

   Not minor if the actual dose to the individual was > or equal to 10 mrem (See basis below).

2. Valve work is to be performed in the reactor water cleanup isolation valve area. As part of the evolution, a scheduled decontamination of the work area is to be performed and shielding is to be installed to reduce work area dose rates. A TEDE ALARA evaluation was performed for the valve work based upon an expected dose rate in the area of 350 mR/hr and contamination levels up to 20 mrad/hr smearable. Based on these conditions, the RP staff concludes that the work would be performed without respirators. The TEDE ALARA evaluation was based on using a HEPA unit for the valve work.

   The first work activity is to decontaminate the work area. A survey is conducted in only the immediate work area. The second activity is to install shadow shielding for that area. During the installation of the shielding, the team needs to adjust a hanging light fixture. Upon exit from the area, the team alarms the portal monitor. Subsequent whole-body counts were conducted and results indicated internal dose of less than 10 mrem internal.

   The Performance Deficiency: When performing the TEDE ALARA evaluation, the licensee did not recognize that the HEPA would not be utilized during the shielding installation. Had this been the case, the TEDE ALARA calculation would have indicated a potential for 10 mrem internal. While the contamination levels were bounded by the TEDE evaluation, the post decontamination survey did not detect elevated contamination levels on top of the light fixture.

   Minor because the actual dose to the individuals involved in the issue was <10 mrem (see basis below)

   Not minor if the actual dose to the individual was > or equal to 10 mrem (see basis below)

Basis:

In both cases, the licensee should have anticipated the potential for internal dose. However, due to either safety issues or dose rates in the area, the licensee would have conducted the work in the same manner. For example in the first scenario, wearing face shields to conduct a containment leak inspection could cause a personnel safety hazard and create more risk to the worker than a minor intake of radioactive material. In the second example, hanging shielding while wearing a respirator could cause serious personnel injury or increase the dose received by the workers due to inefficiencies while wearing a respirator.

The basis for 10 mrem is that this value represents a conservative value for this as follows:

- In general, most if not all NRC licensees have completed prospective evaluations that indicate internal monitoring is not required per 10 CFR 20.1502.
- The value of 10 mrem is 10% of the value that would result in a performance indicator occurrence in accordance with NEI 99-02.
- The value of 10 mrem is a conservative value as it is approximately 1/500th of the annual limit.

Locked HRA Controls

1. A locked high radiation area has been historically controlled in a manner acceptable to previous NRC RP inspectors. During a subsequent plant walkdown (with no changes in radiologicalconditions nor changes to access configuration, e.g., ladder, scaffold, etc.,) an NRC inspector questions workers' ability to access the locked high radiation area. Examples such as the gate was not 2 meters high (Regulatory Guide 8.38 states the fence or gate should be 2 meters or approximately 6 feet) or workers could violate industrial safety standards to gain access to the area. Based on review of the data, there is reasonable assurance that no one has actually attempted to enter the area nor was there any unintended exposure received.

   The Performance Deficiency: Based on the current guidance from Regulatory Guide 8.38, Physical barriers (such as chain link fencing or fabricated walls) may be used to prevent unauthorized personnel access to high and very high radiation areas. Barriers used to control access to high radiation areas should provide reasonable assurance that they secure the area against unauthorized access and cannot be easily circumvented. (That is, an individual who incorrectly assumes, for whatever reason, that he or she is authorized to enter the area, would be unlikely to disregard and/or circumvent the barrier.)

   Minor because of historical precedence and that there were no actual entries nor any unintended exposure occurred.

   Not minor if based on the question, it is determined that personnel entered the area and received unintended dose.

2. During challenge of locks or gates securing access to a locked high radiation areas, a securing device is found not installed correctly or failed (with no historical data indicating previous failures with the

device). No one actually has attempted to enter the area and no unintended exposure has been received.

The Performance Deficiency: If the lock is incorrectly installed then this is the performance deficiency.

If the lock is ineffective, with a history of lock failure, than this is a performance deficiency due to inadequate corrective action of a previous failure. However, if there is no history of lock failure, and no one has entered the area then there is no performance deficiency.

Minor because no one attempted to enter the area and no unintended dose was received.

Not minor if workers entered the area and received unintended dose.

Radioactive Shipping

1. On the shipping paperwork, the unique number of the pallet was incorrectly recorded as the package identification.

   The Performance Deficiency: The package identification number was not recorded on the shipment documentation.

   Minor because this administrative error would not have resulted in any significant dose to the public.

   Not minor if the administrative error would have resulted in any significant dose to the public.

2. During inspection prior to burial, a quantity of water is found that is greater than 1 % of the total volume of the container.

   The Performance Deficiency: The volume of water released exceeds the total volume of the container by 1%.

   Minor because this error would not have resulted in any significant dose to the public. The total volume criteria is not based on dose to the public. For example, 14 gals from a 200 cubic feet liner is acceptable but half a gallon from a 55 gallons drum is not.

   Not minor if based on the proper dose model, the volume increases the risk of any significant dose to the public.

3. A placard, label or marking is found displaced or not present after leaving the station.

   The Performance Deficiency communications on the shipment do not meet regulatory requirements.

Minor because the station is able to provide documentation that the communications were correct when leaving the station.

Not minor if documentation, demonstrating proper communications when leaving the station, is not available.

4. A change in dose rates of the shipment was detected after leaving the station.

   The Performance Deficiency: Dose rates differing from the shipment paperwork was detected.

   Minor because though changed, the dose rates remain below limits for the classification of the shipment.

   Not minor if dose rates that the public can encounter are above the limits of the classification.