ANSWERS TO QUESTIONS FROM FCIX 2011

As of August 2, 2011

Panel: Fuel Cycle Executive Leadership

Speaker: Victor McCree

Questions/Comments:

- Regarding the ISA likelihood inspection findings, Were the identified non conservative assumptions related to accident initiating likelihood or likelihood of IROFS failure?

  Answer: Both. Most issues identified involve reliance on equipment or controls to reduce the likelihood of occurrence of high consequence events, which had not been identified as IROFS. Without the associated controls, the high consequence events were not considered highly unlikely. The NRC has also identified instances where IROFS reliability came into question due to newly identified failures that had not been previously analyzed or determined to be not credible.

- Are any U.S Nuclear power plants as vulnerable to an accident or a similar scale to Fukushima, and if so, what safeguards are in place?

  Answer: Domestic plants were built to meet specific design criteria to withstand the impacts of natural phenomena, including earthquakes and floods. The facilities have also developed response procedures for use by plant operators to mitigate offnormal and design basis emergency events. Other actions have also been taken including the development of severe accident mitigation guidelines and strategies (SAMGS) and post-9-11 security requirements to reduce risks.

- How do quarterly inspection reports improve communication with licenses? Generally delays in communicating results increases discontinuity and increases opportunity for memory lapses.

  Answer: Integrated quarterly reports have been used for some time in the power reactor arena and have been proven to enhance our ability to integrate inputs across several functional areas providing a more comprehensive summary of licensee performance. The impact of the shift from monthly to quarterly is considered minimal since inspectors continue to conduct inspection exit meetings with plant management to summarize the results of the inspections and respond to questions.

- What steps are Region II taking to integrate inputs from the annual ISA updates (submitted by a facility) to risk informs the annual inspection schedule? Also, many facilities have NRC inspections scheduled this week—this should be avoided in future.

  Answer: The NRC has for some time embraced the idea of risk-informed, performance-based inspections. Information submitted in the annual ISA updates, like any other

information received by the NRC, is reviewed and evaluated by our staff to focus our inspection efforts on those issues considered to be important to safety.

The master inspection plan for each plant is typically completed prior to the start of the calendar year inspection cycle. The proposed inspection schedule is then shared with each of the facilities to ensure that the planned activities do not create unnecessary burdens and to reconcile any potential scheduling conflicts. The dates for the 2011 FCIX had not been finalized when the master inspection plans were developed and shared with the plants. However, once the dates for the 2011 FCIX were finalized, the NRC management team evaluated alternative dates for several inspections and ultimately decided to adhere to most of the previously the approved inspection schedules.

In the future, we hope to schedule the FCIX activities in advance of the annual inspection scheduling process.

Panel: Inspection & Oversight
Speaker: Tony Gody
Questions/Comments:

- Are there any thoughts on reviewing the inspection procedures to eliminate areas that have no impact on safety?

  Answer: Yes. The inspection procedures are periodically reviewed to ensure efficiency and effectiveness.

Speaker: Marvin Sykes (CAP Person)
Questions/Comments:

- Why is the apparent effort to require a CAP program not considered a Back Fit? And have to go through Rule making?

  Answer: Implementation of a strong and effective corrective action program is a voluntary initiative. Therefore, a backfit analysis is not warranted since there was no effort underway to modify or add a new provision to the Commission's regulation. Nonetheless, a strong and effective corrective action program is considered to promote behaviors throughout organizations that support objective self-assessment and effective problem identification, evaluation, tracking, correction, and trending.

Speaker: Manuel Crespo
Questions/Comments:

- Both of your examples; the UF_6 fire in glovebox and UO_2 in the HEPA, occurred in what was considered "lower risk operations." How does risk informing catch potential events in "lower risk" areas?

Answer: I have to disagree with the premise that that upsets occurred in "lower risk operations." The operations required the use of items relied on for safety (IROFS) to ensure that the risks posed by the operations are minimized. Risk informing should be focusing on the implementation of IROFS.

- If an operator skipped a step what would you do to fix it beyond talking to the employee and taking disciplinary action?

  Answer: The purpose of my discussion was to not to focus on the actions of the employee, but to focus on the circumstances and environment the employee was placed in that allowed the "skipped step" to occur. Evaluations of operator errors should consider factors that potentially set the operator up to fail.

Panel: Regulatory Issues
Speaker: Sabrina-Atack - *Please note that answers to these questions are being internally reviewed and will be published following approval*.
Questions/Comments:

- How are basic component and substantial safety hazard defined?
- Under what circumstances would an item(s) relied on for safety (IROFS) nonconformance require a Part 21 notification?
- Does Part 21 apply only to IROFS?
- Should hardware IROFS be considered basic components? That is, does a failure of an IROFS meet the substantial safety hazard criteria?
- Could you give an example of a "failure to comply" that has been reported to the U.S. Nuclear Regulatory Commission (NRC)?
- If a matter is reported to the NRC under Appendix A to Part 70, does Part 21 have to be referenced – timelines are different?
- What is the relationship between Part 21 and the full disclosure provisions of the rule on completeness and accuracy of information?
- How big of a deal are counterfeit goods in the industry? How prevalent are they? Have any incidents/accidents occurred due to counterfeit items?
- (a) Given that Section 206 of the Energy Reorganization Act of 1974 and the implementing regulation, 10 CFR Part 21, are directed solely at radiological health and safety impacts, i.e., a failure to comply or defect must be related to a moderate or severe dose to radiological workers or offsite individuals, do issues associated with IROFS based on an acute chemical exposure from licensed material or hazardous chemicals produced from licensed material (as defined in § 70.61(b)(4)(i) or (ii), or § 70.61(c)(4)(i)) have to be considered for reporting under 10 CFR § 21.21 unless the defect or failure to comply also causes a radiological release meeting the thresholds of § 70.61(b)(1)-(3) or (c)(1)-(3)?
  (b) Confirm that this interpretation is consistent with that contained in NUREG-0302 at pp. 21.2-3 – 21.2-4.

- Are non-radiation worker employees considered members of the public in determining whether the reporting criteria of Part 21 have been met?
- (a) Would not the 1-hour and 24-hour reporting requirements contained in Appendix A to Part 70 subsume the reporting requirements in 10 CFR Part 21, i.e., the reporting requirements of Appendix A are in all cases more stringent and more timely than those of Part 21?
  (b) If not, which specific requirements of Part 21 could require reporting or reporting on a more timely basis than Appendix A to Part 70?
  (c) Please give several examples of reports required by Part 21 not required by Appendix A or required on a timelier basis.
  (d) Does the possibility of Part 21 being applicable have to be noted in the oral or written reports provided to the NRC under Appendix A?
  (e) Does a definitive analysis have to be provided as to whether the matter is reportable under Part 21?
- (a) Does a deficiency of failure of an IROFS based upon an administrative control need be considered for reportability under Part 21 because it would not be a "basic component" supplied for such facility or activity?
  (b) If a failure or administrative control has to be considered for reportability, could you give an analogy to failures to implement or deficiencies in procedures that would have to be reported by Part 50 licensees?
  (c) Could you give examples of such Part 50 reports in the past few years?
- If double contingency protection is in place to prevent criticality at a Part 70 facility, do both elements need to be degraded or failed for reportability to be required under Part 21?

Panel: Licensing Issues
Speaker: Diana Diaz-Toro
Questions/Comments:

- Is the role the EPA plays in the NRC's NEPA process documented in an NRC/EPA MOU or regulatory guide?

  Answer: Section 309 of the Clean Air Act authorizes the U.S. Environmental Protection Agency (EPA) to review and rate the draft Environmental Impact Statements (EISs) and final EISs prepared by other Federal agencies (including the NRC) in accordance with the National Environmental Policy Act of 1969, as amended (NEPA). NRC and EPA did sign an MOU in 2002 to establish a basic framework for the relationship of the agencies in the radiological decommissioning and decontamination of NRC-licensed sites, but this MOU is not related to the conduct of NRC's NEPA process.

- Is the NEPA process "initiation" still required at the start of the conceptual design of a new project?

Answer: The National Environmental Policy Act of 1969, as amended (NEPA), requires Federal agencies to consider environmental impacts of the agency actions "in planning and in decision-making which may have an impact on man's environment" [Section 102(A) of NEPA]. The NRC's NEPA review process is usually initiated by the NRC's receipt of an application for a new license or certification, changes to an existing license or submittal of a site decommissioning plan, or a regulatory action such as a rulemaking. Generally, the NRC licensee or applicant includes with their application or a request for a licensing or regulatory action the information needed for the NRC to begin its environmental analysis of the proposed action. This licensee- or applicant-provided information is usually found in an Environmental Report (ER).

Speaker: Ken Kline

Questions/Comments:

- Is NRC using DOE Lessons Learned when evaluating the requirements and obstacles centered around the decommissioning of an enrichment facility? If not, what do you use to determine your basis-of-estimate for the decommissioning costs?

  Answer: While there are several applications for new facilities, NRC is not currently decommissioning any enrichment facilities. At the time that occurs, the information from DOE will be part of the bases for evaluating the decommissioning plan. NRC's guidance for enrichment facility decommissioning cost estimate is NUREG-1757, Vol. 3. Line items of the cost estimate can be reviewed against publish cost data such as RS Means and General Services Administration contract data

- If a Part 20 subsurface survey indicates contamination, is a new cost estimate required within a year regardless of amount discovered? Many current estimates already account for subsurface contamination.

  Answer: No. Updates are required only when there is "significant residual contamination." NRC defines significant as an amount that would require remediation to meet the unrestricted release criteria of 10 CFR 20.1402 at the time of license termination.
  The Decommissioning Planning Rule does not require dose analyses. It suggests that licensees compare measurements at their sites to readily available references, such as the screening values in Appendix H to Volume 1 of NUREG-1757 or Table 2 of Appendix B to 10 CFR 20. Licensees should then make an informed judgment about the potential for the necessity of remediation to meet unrestricted release criteria at license termination.

- Will the reversed regulation include specifics of monitoring, including monitoring for chemicals?

  Answer: Because NRC does not regulate chemicals – that is the EPA's area – there will not be any specific information on monitoring chemical contamination. Licensees

should consider the effects of chemicals, both in their processes and from other sources, on the transport characteristics of their radionuclides. While ground water and contaminant transport are not required during operations by the Decommissioning Planning Rule, at the time of license termination licensees must demonstrate full compliance with release criteria by measuring **all** residual radioactive contamination on the site and performing a comprehensive dose analysis. This means licensees should have a complete understanding of where and how radiological contamination may have migrated during the operational history of the site.

- Requiring licensees to conduct ongoing monitoring and mitigation is not consistent with a performance based approach to the Part 20 license termination rule. NRC is imposing an industry-wide burden based on a very few problem sites. Please restate the rule basis for clarity.

  Answer: The Decommissioning Planning Rule (DPR) does **not** require remediation during operations. 10 CFR 20.1501 has always required that licensees conduct surveys during the operational phase to determine the extent and amount of radioactive material through the site. The DPR emphasizes that the subsurface is a part of the site subject to the required surveys. It also requires that the results of these surveys, including the subsurface, be included with Records Important to Decommissioning. Staff believes that, given the facility of digital record keeping, the electronic location of records does not create an undue burden on licensees.

- Will a Record of Revision be included in NUREG-1757 Vol. 1 Rev. 1 to indicate what has changed?

  Answer: A master track changes document is not available, but staff is available to answer specific questions concerning the guidance.

Speaker: Kevin Morrissey
Questions/Comments:

- How does creating a new process for screening license application (LA) changes comport with a risk-informed performance based regulatory basis? This adds cost, creates potential confusion for evaluators and achieves no benefit to safety. Why not just make 70.72 broader?

  Answer: Using a license condition as a basis for making changes to the LA without prior approval is an optional activity that licensees may choose to keep their LA current, accurate and consistent with the facility and design basis. It is risk-informed in that it allows the licensee to make changes that meet certain criteria without the administrative burden of the amendment process. Forgoing the amendment process for LA changes could be a cost saving measure. The staff does not believe that the process provided to make changes to the LA creates additional confusion for licensees. Rather, the staff believes that the changes permitted to be made to the LA are significantly different than

changes to the safety program/ISA, as they are generally changes to programmatic commitments and not safety program controls. The rule in 70.72 was written to include a configuration management program and to provide criteria for changes to the safety program that didn't require amendments. The staff does not believe that the rule needs to be broadened because the current rule does not need to address licensee's optional choice to make LA changes with NRC prior approval. Licensee can make proposed LA changes via the amendment process at anytime.

- Is the term "activities of personnel" considered to be the same as "procedures which direct activities of personnel?"

  Answer: "Activities of personnel" includes all actions that are taken by personnel. Some of these actions may result from instructions in the form of procedures, while others may not. Procedures are generally, therefore, only a subgroup of "activities of personnel". An example of a non-procedure activity may be the action to "see and flee" that results from personnel training but may not specifically be part of a procedure.

- It is most unfortunate that industry is just now at FCIX, hearing about relatively significant modifications to a draft guide developed by NRC-Industry FACA working group. At minimum, NRC should have contacted the industry Working Group member in advance of FCIX.

  Answer: Staff believes the modifications made to the draft Regulatory Guide (DG-3037) were minor, not significant. The minor modifications included the addition of examples to illustrate the point and a clarification about changes to the LA and the possible need for NRC approval. The main reason for sending the guide out again for public comments was the time period since the guide was last published, which is now about 2 years.

Speaker: Jeff Reynolds
Questions/Comments:

- What impact do you think NRC's Safety Culture Policy Statement will have on your Safety Culture Activities? Do you see this new policy statement as a positive step forward?

  Answer: The impact of NRC Safety Culture Policy Statement on GEH's activity may be minor. However, as with all policies and procedures, GEH will need to monitor policies of regulators and other groups/associations to ensure general alignment. This is considered a positive step forward.

- Do you equate Safety Conscious Work Environment (SCWE) w/ Safety Culture or is SCWE a trait of a larger Safety Culture?

Answer: SCWE is a one trait or component of nuclear Safety Culture. Other traits include continuous warning, work practices, and corrective action program. SCWE is one of the most important, as no other traits will be effective in a dysfunctional SCWE (aka chilled work environment)

- Did you find management trust was greater for upper managers rather than immediate managers? We have seen this at our site, and I was just wondering if you found the same to be true.

  Answer: Issues with management trust were evident across the entire organization. It is important to ensure that survey participants are aware of whom questions refer to in the survey to avoid confusion and ensure actions are appropriately directed.

Panel: International Safeguards
Speaker: Brian Horn
Questions/Comments:

- The U.S hasn't had an IAEA visit since 1999?

  Answer: The last time the International Atomic Energy Agency (IAEA) selected an NRC licensed facility for inspection occurred in 1999. The IAEA performed routine inspections at the NRC licensed site from 1999 until mid 2006 when the IAEA decided to cease applying safeguards at the NRC licensed facility.
  Approximately ten years ago, the IAEA selected a DOE site for inspections. The IAEA still performs routine inspections at a DOE Site. These IAEA inspections focus on the verification of nuclear material at the NRC licensee site and the DOE site.
  The above IAEA visits were performed pursuant to the US/IAEA Safeguards Agreement at an NRC site

  In addition, in the fall of 2010, the IAEA performed a "Complementary Access" visit to a NRC licensee and Agreement State Licensee sites. This "Complementary Access" visit was performed pursuant to the US/IAEA Additional Protocol Treaty. The objective of these "Complementary Access" visits was to resolve several questions that the IAEA had concerning site operations that was contained in the Additional Protocol reports to the IAEA. The IAEA questions concerned issues such as the location and use of buildings at the site.

Speaker: Tom Grice
Questions/Comments:

- Who specifically massages the NMMSS data for the IAEA Report?

  Answer: The Nuclear Materials Management and Safeguards System (NMMSS) takes the information submitted by the licensees and reformats the information into the appropriate format required by the International Atomic Energy Agency (IAEA).

- Could the IAEA inspections come from a restricted country, and if so how would they be granted access?

  Answer: The IAEA inspectors will always be foreign nationals (IAEA Inspectors are prohibited from conducting inspections in their own country.) However, IAEA inspectors will not come from a restricted country. All IAEA inspectors are vetting by the United States prior to being granted access to facilities within the United States. INFCIRC/288, *Agreement Between the United States of America and the Agency for the Application of Safeguards in the United States of America*, specifically states, "The Agency (IAEA) shall secure the consent of the United States to the designation of Agency inspectors to the United States."

Panel: Not Specified
Speaker: Several NRC Speakers
Questions/Comments:

- Does the NRC look for and report positive findings?

  Answer: The NRC evaluates plant performance and considers adherence to the relevant regulations and standards to be positive performance. When regulatory compliance issues or deviations from safety standards are identified, the NRC has a responsibility to inform stakeholders.

- I have noticed during today's presentations that the emphasis is on faults, issues—i.e. Negative Findings. Faults need to be found and fixed—no doubt—but there is substantial evidence to show that positive, excellent safety cultures are built on positive reinforcement, not negative.

  Answer: The presentations developed for this conference were not intended to emphasize faults but to focus on improving performance by sharing lessons and operating experience. The NRC believes that it is important to effectively use operating experience to identify fundamental weaknesses and then determine appropriate plant-specific actions that will minimize the likelihood of similar events.

- What is the authority for the NRC to limit regulation of facilities with more than 2,000 kg of UF_6 to only NRC if this is a safety regulation?

  Answer: The basis for the NRC's oversight of UF_6 is derived from the Atomic Energy Act (AEA). AEA Section 161 gives the NRC broad authority to establish regulatory requirements necessary to protect the public health and safety, and Chapter 7 of the AEA details the specific statutory bases for NRC licensing and regulating the use of source material, such as UF_6. Section 274 of the AEA allows the Commission to delegate authority to Agreement States for certain radioactive materials including UF_6. However, consistent with AEA Section 274(c)(4), the Commission determined that it will retain regulatory authority for facilities with more than 2,000 kg of UF_6 "because of the

hazards or potential hazards thereof." The proposed rule limiting licensing authority is consistent with the Commission's direction in SRM– M070308B, dated March 22, 2007, and the letter the NRC sent to all the Agreement States (FSME–07–036), dated April 13, 2007, informing them that the NRC ''will regulate future major fuel cycle facilities licensed under 10 CFR Part 40, *e.g.,* uranium conversion and deconversion facilities.'' The proposed requirement is similar to the existing requirement in 10 CFR 72.8.

- Is any "Plutonium Reprocessing" activity ongoing in the state? (Because we still see some Reg. Guides that are associated with it.)

  Answer: No, there is not currently any plutonium reprocessing activity being conducted at any facility licensed by the NRC. It is true there are several Regulatory Guides that include "plutonium processing" in their title. These regulatory guides were originally generated in the 1970's, when there was significant interest in reprocessing of spent nuclear fuel, which at that time, involved separation and subsequent processing of plutonium. Several of these regulatory guides have been updated in recent years in support of the ongoing license application review of the Mixed Oxide (MOX) Fuel Fabrication Facility, being constructed on DOE's Savannah River Site. The MOX facility will process plutonium and blend it with uranium to manufacture MOX nuclear fuel.

Please note that answers to additional questions from the FCIX are being internally reviewed and will be published shortly upon approval.