

October 17, 2007

MEMORANDUM TO: Deborah A. Jackson, Chief
Technical Support Branch
Special Projects and Technical
Support Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
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FROM: James A. Smith, Project Manager
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SUBJECT: MINUTES FROM OCTOBER 4, 2007 PUBLIC MEETING WITH THE
NUCLEAR ENERGY INSTITUTE (NEI) TO DISCUSS 10 CFR PART 70,
APPENDIX A REPORTING GUIDANCE

The Nuclear Regulatory Commission (NRC) held a public meeting with the Nuclear Energy Institute and other stakeholders on October 4, to discuss Part 70, Appendix A Reporting Guidance. Working group members from the NRC as well as members from industry attended. Members of the public were invited to participate. The purpose of the meeting was to discuss follow-up actions from the last meeting whose objectives were to develop guidance to meet the requirements of 10 CFR Part 70, Appendix A and to identify changes that are needed to the regulations to achieve a common understanding of reports required under Appendix A.

The working group continued to discuss the requirements in Enclosure 2, a draft document entitled, "Summary of 10CFR Part 70 Appendix A Reporting Issues," authored by Christopher Tripp; and the proposed changes versus current requirements using NUREG-1022 format/matrix. Additional topics discussed were the processes and drawbacks for retracting licensee event reports.

Action items for the next meeting are: 1) NRC staff will prepare rationale for why it is important for licensees to report significant events to NRC in a timely manner per the regulations; and 2) NRC staff will also consider the need to prepare a NUREG for reporting requirements similar to NUREG-1022 that was prepared for reactor events with a proposed title "Event Reporting Guidance for Fuel Cycle Facilities 10 CFR Part 70, Appendix A." Industry had an action item to provide clarification to Enclosure 3, a draft document entitled "Reportable Safety Events."

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The next meeting is scheduled for Thursday, November 1, 2007. The meeting notice is forthcoming.

Enclosures:

1. List of Meeting Attendees
2. Summary of 10 CFR Part 70 Appendix A Reporting Issues
3. Reportable Safety Events

D. Jackson

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October 17, 2007

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6. Reportable Safety Events

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List of Meeting Attendees:

10 CFR Part 70 Appendix A

October 4, 2007
12noon - 1:30pm

NAME	ORGANIZATION
Alphonsa Gooden	US NRC
Deborah Jackson	US NRC
Nilda Rivera	US NRC
Amy Snyder	US NRC
Christopher Tripp	US NRC
Randy Schakelford	Nuclear Fuel Services
Robert Link	AREVA
Charlie Vaughn	Industry Consultant
Scott Murray	Global Fuel
John Nagy	Nuclear Fuel Services

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Summary of 10 CFR Part 70 Appendix A Reporting Issues

A number of issues concerning the interpretation of the reporting requirements of 10 CFR Part 70, Appendix A, have been raised by recent fuel facility events, many of which have cut across different safety disciplines and different licensees. A large proportion of these issues involve various aspects of “unanalyzed conditions.” The purpose of the enclosed list is to focus on those aspects of event reporting that have given rise to interpretive difficulties, rather than on those that have proven to be more straightforward. Each of the numbered issues is therefore described in terms of a position that has been stated by one or more licensees in justifying why an event or condition was not reportable to the Nuclear Regulatory Commission (NRC) under Appendix A, and a position that the NRC considers to be a correct interpretation of the reporting requirements of Appendix A (see the table below). Our goal in this workshop is to gain a common understanding of how the reporting requirements are to be applied to commonly-occurring situations at the fuel facilities.

Event reporting is an important part of the regulatory framework, because it provides the NRC with real-time information about unfolding conditions at its regulated facilities, allows it to inform other licensees of potentially safety-significant concerns at other fuel facilities, and contributes to performance-based regulation through monitoring and trending of performance. Unanalyzed conditions, in particular, are very safety significant because historically it has been conditions and scenarios that have not been considered or controlled (or considered credible) that have led to accidents. The NRC; therefore, is especially interested in knowing what conditions that have not been previously considered might have safety significant impacts on its regulated facilities.

Enclosure 2

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Stated Licensee Position	Proposed NRC Position
<p>1. An event is not reportable as an unanalyzed condition if it is bounded by a similar accident sequence already in the Integrated Safety Analysis (ISA).</p>	<p>In principle, similar sequences may be grouped together in the ISA, but criteria on what constitutes a bounding sequence are needed. All credible sequences should be considered in performing the ISA. Thus determining whether the event that occurred is bounded by a sequence already evaluated in the ISA should be straightforward and clear (and should take significantly less than 24 hours).</p> <p>The sequence involved in the event is <u>not</u> bounded by an accident sequence already in the ISA if:</p> <ul style="list-style-type: none"> ● Its consequence* (mitigated and unmitigated) is greater than that of the sequence in the ISA. ● Its likelihood* is higher than that of the sequence in the ISA. ● Any initiating events, initial conditions, or items relied on for safety (IROFS) in the ISA are inapplicable to the sequence involved in the event, e.g.: <ul style="list-style-type: none"> - credited items in the ISA are not present where the event occurred - credited items in the ISA are similar to items where the event occurred, but those items do not have management measures applied (were not previously identified as IROFS) - physical conditions in the two sequences are sufficiently different that credited items in the ISA would not adequately perform their safety function where the event occurred. <p>(Note that to be applicable, it is <u>not</u> necessary that all items be from the same accident sequence. However, the set of all such items must be sufficient to meet the performance requirements in the sequence that occurred.)</p> <p>*Consequences and likelihood are defined/determined in the context of the licensee's ISA methodology.</p>

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<p>2. An event is never reportable if it does not result in an actual acute chemical or radiological dose exceeding the performance requirements of 10 CFR 70.61.</p>	<p>An event that does not result in actual chemical or radiological consequences* is not reportable under Appendix A(a)(1)-(a)(3) or (b)(3). However, events without actual consequences may be reportable under the remaining portions of Appendix A. Some of these events include cases in which the performance requirements were not met, even though the actual consequence did not occur (e.g., an intermediate consequence event becomes less than “unlikely”, or a high consequence event less than “highly unlikely”).</p> <p>Certain provisions of Appendix A (e.g., (a)(4), (a)(5), (b)(1)) require that potential as well as the actual consequences be considered. This evaluation must be based only on the applicable credited preventive or mitigative IROFS; credit must not be taken for fortuitous conditions that are not specifically controlled.</p> <p>In addition, other reporting requirements (e.g., Part 20) may still apply.</p> <p>(*For this purpose, radiological consequences includes criticality, regardless of whether it resulted in a dose to individuals.)</p>
<p>3. In characterizing the safety-significance of events, only the actual as-found conditions (e.g., quantity/inventory of material, configuration) need to be considered.</p>	<p>Determinations of safety significance in event reporting must be based on analyzed rather than as-found conditions. Safety significance must be evaluated based on established and documented safety controls (e.g., preventive or mitigative IROFS, defense-in-depth features); credit must not be taken for fortuitous conditions that are not specifically controlled, or new limits introduced after the fact (see Information Notice 2007-13).</p> <p>Defense-in-depth features used for this purpose should be clearly identified as such (i.e., as defense-in-depth controls that are not IROFS) in the event report, and they must have management measures applied commensurate with the amount of risk reduction ascribed to them.</p>

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<p>4. An event is not reportable as an unanalyzed (or as an improperly analyzed) condition if it is analyzed within 24-hours.</p>	<p>A condition that is unanalyzed at the time of discovery must be reported within 24 hours, regardless of how long it takes to perform the needed analysis afterwards.</p>
<p>5. An event is not reportable as an unanalyzed condition if, upon evaluating the as-found condition, the licensee subsequently determines that as-found conditions were “safe.”</p>	<p>A condition that is unanalyzed (and was required to be analyzed) at the time of discovery must be reported within 24 hours, regardless of whether it is subsequently found to be “safe.” Determination that an event was analyzed requires both that there is an analysis in place and that sufficient controls were established prior to, and were in effect at the time of, the event. Determination that a process is “safe” means that the performance requirements were met, based on established preventive or mitigative IROFS.</p> <p>Determination of whether the event was analyzed (and was appropriately controlled with IROFS) should be able to be made in significantly less than 24 hours; however, if this cannot be met within this time period, the event must be reported.</p> <p>Licensees are encouraged to be conservative in making decisions of reportability, in order to ensure compliance with the specified time periods established in Appendix A of 10 CFR Part 70. Event reports may be corrected and/or supplemented in accordance with 10 CFR 70.74(a)(4) as appropriate.</p>

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<p>6. The 1-hour or 24-hour time period for reportability starts upon the licensee's determination that the event is reportable.</p>	<p>The time period begins at the time of discovery by a cognizant and responsible individual (or as specified in the license application). The 24-hour time period, in particular, is intended to allow licensees sufficient time to make the determination of reportability. One-hour reportable events are significant operational events that should not require much in the way of evaluation (e.g., an event involving the loss of all controls, such that a release or criticality accident is possible). The occurrence of such an event should be readily apparent, and should already have been analyzed in the ISA (otherwise it would be an unanalyzed event, which is reportable within 24 hours).</p> <p>If, however, reportability cannot be determined within the relevant time period, the event must be reported.</p> <p>Licensees are encouraged to be conservative in making decisions of reportability, in order to ensure compliance with the specified time periods established in Appendix A of 10 CFR Part 70. Event reports may be corrected and/or supplemented in accordance with 10 CFR 70.74(a)(4) as appropriate.</p> <p>A trained fissile material operator or supervisor would constitute a "cognizant and responsible individual," whereas non-fissile material workers would not (consistent with Section 2.5 of NUREG-1022).</p>
<p>7. An event is not reportable if there were no IROFS associated with the event; Appendix A is thus not applicable.</p>	<p>Situations in which IROFS should have been identified, but were not, are reportable (e.g., no identified IROFS are available and reliable to perform their intended functions [(a)(4)], or no IROFS are identified because the event was not analyzed [(b)(1)]).</p>

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<p>8. The discovery of an unanalyzed accident sequence is only reportable as an unanalyzed condition if associated with an actual event in the facility.</p>	<p>An unanalyzed accident sequence is reportable if the system in question operated for some time period with licensed material and without necessary controls, so that the performance requirements were not met, and that the facility was in a state of unacceptable risk. (Whether necessary controls were in place may involve determination of whether this sequence was bounded by another sequence already in the ISA.) If the licensee has to take specific actions in order to restore compliance (e.g., establishing additional controls), then this means that the performance requirements were not met.</p> <p>Whether the sequence was discovered as the result of an event does not affect reportability. However, if an event occurred such that the newly-discovered sequence had been initiated, this is more safety significant than if none of the events involved in the sequence had occurred. Therefore, to accurately characterize the safety significance, the event report should state whether an event actually occurred.</p>
<p>9. Interpretation of 10 CFR Part 70, Appendix A(a)(5)</p> <p><i>Loss of controls such that only one item relied on for safety, as documented in the Integrated Safety analysis summary, remains available and reliable to prevent a nuclear criticality accident, and has been in this state for greater than eight hours.</i></p> <p>Does this apply only to IROFS that are required to be continuously available?</p> <p>Does this apply only to IROFS that have been failed more than eight hours at the time of discovery? Or IROFS whose failure exceeds eight hours subsequent to discovery?</p> <p>What if the time of outage cannot be determined?</p>	<p>TBD</p>