

August 27, 2004

MEMORANDUM TO: Melanie Galloway, Section Chief
Technical Support Group
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

FROM: Tamara D. Powell */RA/*
Technical Support Group
Division of Fuel Cycle Safety
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SUBJECT: MEETING SUMMARY OF THE FCSS STAFF WORKSHOP ON
INITIATING EVENT FREQUENCY, JUNE 16, 2004

On June 16, 2004, the Division of Fuel Cycle Safety and Safeguards (FCSS) conducted a staff workshop on Initiating Events Frequency. This was the sixth in a series of staff workshops on Integrated Safety Analysis (ISA) Summary reviews. The workshops are in support of the development of interim staff guidance (ISG) to clarify the ISA portions of the Standard Review Plan (NUREG-1520). The resolutions to the items discussed in the workshops will form the ISGs. The workshop was well attended and there was a high level of staff participation. The workshop slide presentation is included in the Attachment.

Workshop Details

The highlights from each discussion topic follows.

Initiating Events Frequency (IEF) and Items Relied on For Safety (IROFS)

During previous staff ISA workshop discussions on IEF, the consensus was that if credit is taken for an item under control of the licensee, it should be labeled an IROFS; if credit was not taken, it does not have to be labeled an IROFS. This has been further clarified to include a distinction between items with operations functions and items with safety functions. The presenter stated that an item, whose failure is the initiating event, is an IROFS if it has a solely safety function or has both a safety and operations function. The presenter also stated that an item, whose failure is the initiating event, is not an IROFS if it has strictly an operations function. A few staff disagreed and felt that just because an item has a safety function doesn't necessarily mean it is an IROFS. Another staff member asked if the safety function had to be related to a specific accident sequence. The concern was that there may be instances where sequences go to low consequence therefore it wouldn't be an IROFS. An item is considered to have a safety function if it is relied on to meet the performance requirements of 70.61.

IEF Index

The licensee needs to be able to support indices if they are assigned to initiating events for item failure. These indices may be used in determining overall likelihood. Indices greatly relied upon for overall likelihood should be scrutinized. A staff member wanted to know how much

proof did the licensee need to provide. Staff was directed to use professional judgement to determine if the licensee justification seemed reasonable and to ask questions if it doesn't. A commenter felt that we are relying on professional judgement but telling licensee not to use professional judgement, but hard data. A more specific suggestion was given to scrutinize if there is an IEF that is less than 10^{-2} . Another participant felt that because of the short operating history of most fuel cycle facilities, too much time is spent trying to second guess licensees on IEF.

More questions arose concerning the failure of an item that has a safety function. Some were still unclear if the failure of a safety function meant it was automatically an IROFS and a few were apprehensive about having an IROFS failure as an initiator of an event. The presenter clarified that if an item that has a 70.61 safety function, then it is an IROFS. It was also impressed upon the staff that we are differentiating between operational and safety functions.

What Licensees Have Done

Examples of what a few licensees have done were given. One licensee used operating experience for IEF and identified some initiating events as IROFS failures. Many staff felt that the 30 years of operating experience was too short and an index was necessary. A comment was made that IEF can't be based on consequence but should be based on the failure rate or occurrence of the event. With respect to failure duration, another commenter thought that you should rely on surveillance to determine the failure duration. A staff member disagreed and felt that you can't base failure duration on surveillance, but it should be based on how long it took to respond to the failure. If an IROFS is monitored and controlled, you would know when it has failed not just by surveillance. Another commenter noted that licensees may try to use the fact that they have a backup to justify not having surveillance or the surveillance failing.

Assurance in ISA process

Management measures, including configuration management, are ways to accomplish assurance in the ISA process. Other possible assurances include sample validation of the IEF in NRC inspection activities, commitments through the licensee quality assurance program, and adding a license condition on maintaining the validity of IEF. Some staff thought that it was a good idea to involve the NRC inspection process, but others felt that this route would take longer. It was noted that if we start finding that a licensee is having failures, we would have to go back and look at it regardless of if it is an IROFS or not. Another comment was made that if an item is not an IROFS but the item's IEF is affected, then it has to be maintained. A staff member felt that a license condition would be necessary in certain situations, but others disagreed and weren't sure how a license condition would differ from what's already in the SRP and the regulations.

Attachment:
Initiating Events Frequency Workshop Slides

cc: R. Pierson, FCSS
J. Holonich, FCSS

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Initiating Events Frequency Workshop Slides

cc: R. Pierson, FCSS
J. Holonich, FCSS

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