

August 29, 2002

MEMORANDUM TO: Ledyard B. Marsh, Deputy Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: William D. Beckner, Program Director /RA/
Operating Reactor Improvements Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: TASK INTERFACE AGREEMENT (TIA 2001-16) NUCLEAR
REGULATORY COMMISSION (NRC) POLICY QUESTIONS ON
LICENSEE USE OF RISK TECHNIQUES TO JUSTIFY OPERATION IN
UNANALYZED CONDITIONS

By memorandum dated December 7, 2001, RII requested the Office of Nuclear Reactor Regulation (NRR) to review and provide a policy position regarding the generic licensee-use of probabilistic risk information for justifying operation in an unanalyzed condition. RII provided detailed information on a technical issue regarding the electro-hydraulic control system equipment at the Browns Ferry Nuclear Plant (BFN).

Provided below are our answers to the two RII questions. This response does not contain any new agency policy on the use of probabilistic risk information; instead, it explains and clarifies existing agency policy and guidance. Since there is not need to refer this issue to other NRC processes, these responses should be used to close out this TIA.

1. What is the NRC position on the generic licensee-use of a probability-of-occurrence type of approach as the basis for allowing operation in an unanalyzed condition, without prior review and approval?

When a plant is found to be in an unanalyzed condition (i.e. if there are conditions in which the plant is being operated for which analyses do not exist to support that required safety performance would be achieved), the licensee must promptly determine whether or not such a condition poses an immediate threat to the health and safety of the public. If it does, the licensee's most immediate and important action would be to place the plant in a safe condition. This immediate action is a prerequisite before any subsequent course of action is considered.

Once there is reasonable assurance that no immediate threat to the health and safety of the public exists, a subsequent action should then be considered by the licensee. Such an action may include an operability evaluation of the systems, structures and components (SSCs) affected and/or initiation of corrective measures. Depending on specific situations, the process laid out in Generic Letter (GL) 91-18 must be followed.

CONTACTS: Ian Jung
301-415-1837

Eileen McKenna
(301)415-2189

The timeliness of the operability evaluation and/or corrective measures should be commensurate with the safety significance of the condition in which the licensee currently is. The safety significance can be determined using various arguments that include remaining defense-in-depth features, compensatory measures, conservatism and margins, or probabilistic risk information. This safety significance determination can typically provide a justification for the timeliness of the planned resolution of the unanalyzed condition.

However, it is generally inappropriate for licensees to use only the probabilistic risk information to justify continued operation of the plant. Instead, the probabilistic insights should supplement the overall deterministic or engineering analysis for justification. The Commission stated in the PRA Policy Statement that the PRA use in all regulatory matters should be increased "... in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy." Regulatory Guide 1.174, "An Approach for using Probabilistic Risk Assessment in Risk-Informed Decisions On Plant-Specific Changes to the Licensing Basis," also emphasizes the risk-informed, as opposed to risk-based, approach in making licensing decisions.

The licensee's justification for continued operation (JCO) may sometimes require prior NRC staff review and approval. For example, if the equipment at issue is covered by the TS and is declared inoperable based on an operability evaluation, the licensee may prepare a JCO for staff review and approval via license amendment or Notice of Enforcement Discretion (NOED) process.

In summary, the licensee may justify their continued operation in some cases when their plant is determined to be in an unanalyzed condition. Probabilistic risk insights, e.g., probability of occurrence, from a PRA-type analysis can be used complementing reasonable overall bases that may include defense-in-depth measures, engineering analysis, compensatory measures, planned corrective measures and so forth. It is emphasized again that probabilistic information cannot be a sole basis for a JCO. A JCO may or may not require prior staff review and approval depending on a specific unanalyzed condition. Note that the current staff guidance on unanalyzed conditions is not intended to address all possible cases. However, in all cases, the licensee must promptly determine that no immediate threat to the health and safety of the public exists and place the plant in a safe condition.

2. What is the NRC position on the generic use of a probability-of-occurrence type of approach as the basis for reducing the frequency of an event described in the FSAR and thereby, characterizing the condition as an accident as opposed to a transient, without prior NRC review and approval?

The design basis events analyzed in Chapter 15 of Final Safety Analysis Report (FSAR) were intended to ensure robust design of adequate defense-in-depth. It would be contrary to the defense-in-depth philosophy if the events were to be classified differently solely based on a probability argument. It is also the Commission's guidance that no regulatory decisions be made solely based on risk (e.g., frequency or probability). In addition, there is no established probability threshold that allow licensees to downgrade or exclude events from their FSAR.

Changes to FSAR must be made in accordance with 10 CFR 50.59. §50.59 (c) (2) (viii) states that “A licensee shall obtain a license amendment pursuant to §50.90 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in a departure from a method of evaluation described in the FSAR (as updated) used in establishing the design bases or in the safety analyses.” Use of probabilistic risk information alone to change classification of an event in FSAR would be viewed as a departure from a method of evaluation, and consistent with this criterion, this change would require a license amendment.

Probabilistic risk information can provide valuable insights that may be unavailable through other methods; however, the risk insights should be used carefully and appropriately depending on applications. In all cases, the probabilistic risk information should complement overall deterministic or traditional engineering decision making. This risk-informed approach, if used properly, should provide a sound decision making tool that maintains defense-in-depth principles while incorporating valuable risk insights.

This completes our work on TAC No. MB3732.

cc: E. McKenna, NRR
K. Jabbour, NRR
H. Berkow, NRR
J. Starefos, RII
P. Fredrickson, RII
L. Plisco, RII
All Regional Division Directors

Changes to FSAR must be made in accordance with 10 CFR 50.59. §50.59 (c) (2) (viii) states that "A licensee shall obtain a license amendment pursuant to §50.90 prior to implementing a proposed change, test, or experiment if the change, test, or experiment would result in a departure from a method of evaluation described in the FSAR (as updated) used in establishing the design bases or in the safety analyses." Use of probabilistic risk information alone to change classification of an event in FSAR would be viewed as a departure from a method of evaluation, and consistent with this criterion, this change would require a license amendment.

Probabilistic risk information can provide valuable insights that may be unavailable through other methods; however, the risk insights should be used carefully and appropriately depending on applications. In all cases, the probabilistic risk information should complement overall deterministic or traditional engineering decision making. This risk-informed approach, if used properly, should provide a sound decision making tool that maintains defense-in-depth principles while incorporating valuable risk insights.

This completes our work on TAC No. MB3732.

cc: E. McKenna, NRR
K. Jabbour, NRR
H. Berkow, NRR
J. Starefos, RII
P. Fredrickson, RII
L. Plisco, RII

DISTRIBUTION:

ADAMS ICJung WDBeckner
OES R/F TReis MRJohnson

ADAMS ACCESSION NUMBER:

DOCUMENT NAME: G:\RORP\OES\Staff Folders\Jung\TIA BrownsFerry.wpd

*See Previous Concurrence

OFFICE	RSE:OES:RORP	PM:RPRP:DRIP	SC:OES:RORP	BC:SPSB
NAME	ICJung:sg*	EMMcKenna*	TReis*	MRJohnson*
DATE	07/17/2002	7/18/2002	08/26/2002	07/25/2002
OFFICE	PD:RORP:DRIP			
NAME	WDBeckner			
DATE	08/29/2002			

OFFICIAL RECORD COPY