

Emergency Preparedness Program Frequently Asked Question (EPFAQ)

EPFAQ Number:	2018-02
Originator:	David Young
Organization:	NEI
Relevant Guidance:	This question concerns NEI 99-01, <i>Development of Emergency Action Levels for Non-Passive Reactors</i> , Revision 6.
Applicable Section(s):	BWR EAL Fission Product Barrier Table Thresholds for LOSS or POTENTIAL LOSS of Barriers; RCS Barrier Loss #3.A
Date Accepted for Review:	4/4/2018
Status:	Under Review

QUESTION OR COMMENT:

Background

The term UNISOLABLE is defined as:

An open or breached system line that cannot be isolated, remotely or locally.

BWR fission product barrier threshold RCS Loss #3.A states,

UNISOLABLE break in ANY of the following: (site-specific systems with potential for high-energy line breaks)

The basis section for RCS Loss #3.A contains this statement,

If it is determined that the ruptured line cannot be promptly isolated from the Control Room, the RCS barrier Loss threshold is met.” The PWR EAL Fission Product Barrier Table in NEI 99-01, Rev. 6, contains the following RCS Barrier Loss threshold: An automatic or manual ECCS (SI) actuation is required by **EITHER** of the following:

Question

How should a plant operator classify an RCS leak at a BWR facility that is isolated using a local control (i.e., outside the Control Room)?

PROPOSED SOLUTION:

The emergency classification level (ECL) declared for an off-normal event must be made in accordance with the licensee’s approved emergency classification scheme. The generic scheme development guidance used by licensees, and endorsed by the NRC, is structured to require emergency classifications commensurate with increased risk to the plant, plant workers and the public. With respect to the definition of UNISOLABLE, the provision for “local” isolation is included to preclude unwarranted emergency declarations, i.e., if operators can locally isolate an RCS leak, then the integrity of the RCS barrier will be maintained and there is no increased risk to the plant, plant workers or the public (although subsequent corrective actions may be required by plant Technical Specifications and procedures).

Emergency Preparedness Program Frequently Asked Question (EPFAQ)

In accordance with the requirements of 10 CFR 50, Appendix E, section IV.C.2, a licensee shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate ECL. Following the detection of an RCS leak, a plant operator must assess, classify, and declare the emergency within 15 minutes of the initial leak indications. If operators, following procedures, can isolate the leak within 15 minutes of the first indication, then RCS barrier integrity will be maintained and no emergency declaration is required. If the leak cannot be isolated, from the Control Room or locally per the definition of UNISOLABLE, within 15 minutes of initial indications, then the RCS barrier must be considered lost and the appropriate ECL declared.

The sentence cited above from the basis section for RCS Loss threshold #3.A should be understood within the context of assessing the conditions associated with a large high-energy line break. The authors of NEI 99-01, Revision 6, wrote this statement with the assumption that a plant would not have the capability to locally isolate such a leak within 15 minutes, hence the wording "from the Control Room;" there was no intent to preclude consideration of a local capability should a plant design provide one. If a plant design has a local isolation capability, then the basis section should be revised to state that RCS barrier Loss threshold #3.A is met if prompt isolation cannot be accomplished from the Control Room or locally (in accordance with the definition of UNISOLABLE). "Prompt" should be understood to mean that the emergency must be declared as soon as the plant operator determines that the leak cannot be isolated and in all cases within 15 minutes of initial event indications.

A licensee may add clarifying wording reflecting this position to their site-specific emergency classification scheme procedure and/or technical basis document. Consistent with the guidance in Regulatory Issue Summary (RIS) 2003-18, Supplement 2, *Use of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 4*, dated January 2003, it is reasonable to conclude that this change would be considered as a "difference."

NRC RESPONSE:

RECOMMENDED FUTURE ACTION(S):

- ☐ INFORMATION ONLY, MAINTAIN EPFAQ
- ☒ UPDATE GUIDANCE DURING NEXT REVISION