Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

April 30, 2002

10 CFR Part 50, App E

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Gentleman:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, and 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE (EPIP) REVISIONS

TVA is submitting this notification in accordance with the requirements of 10 CFR Part 50, Appendix E, Section V, to provide NRC with Revision 32 to EPIP-1. The EPIP revision date for this change is April 7, 2002.

The enclosed information is being sent by certified mail. The signed receipt signifies that you have received this information. If you have any questions, please telephone me at (256) 729-2636.

Sincerely,

T. E. Abney
Manager of Licensing
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A045

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ENCLOSURE
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT
UNITS 1, 2, AND 3

EMERGENCY PLAN IMPLEMENTING PROCEDURES (EPIP)
EPIP-1

SEE ATTACHED

GENERAL REVISIONS

GENERIC FILING INSTRUCTIONS

FILE DOCUMENTS AS FOLLOWS:

PAGES TO BE REMOVED	PAGES TO BE INSERTED
EPIP-1 REVISION 31 (AFFECTED PAGES)	EPIP-1 REVISION 32 (SUPPLIED PAGES)

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EPIP-1

EMERGENCY CLASSIFICATION PROCEDURE

REVISION 32

PREPARED BY: T. W. CORNELIUS PHONE: 2038

RESPONSIBLE ORGANIZATION: EMERGENCY PREPAREDNESS

APPROVED BY: GILBERT V. LITTLE DATE: 04/04/2002

EFFECTIVE DATE: 04/07/2002

LEVEL OF USE: REFERENCE USE

QUALITY-RELATED

REVISION LOG

Procedure Number: EPIP-1

Revision Number 32

Pages Affected: 1, 14, 15, 17, 84, 86, 89

Description of Change:

IC - 42 EPIP 1, rev. 31 revision is being conducted to change the Site Boundary Radiation Reading from a beta-gamma value to gamma only value. This change does not involve the numerical value. This revision is in compliance with the REP and doesn't affect the BFN EP standard emergency classification and action level scheme. This revision is being conducted to ensure consistency with NUMARC/NESP-007, Reg Guide 1.101, and NEI 99-01 (Rev. 4).

IC - 43 EPIP 1, rev. 32 is being conducted to modify information that support EAL 1.1-G1, 1.1-G2, and 1.2-G. The revision incorporates changes resulting from modifications to calculations that support Minimum Alternate RPV Flooding Pressures (MARFP) and Minimum Steam Cooling Reactor Water Level (MSCRWL). Revisions to these calculations were conducted in support of the EOI Program Manual Revision 21 (U3C11).

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REACTOR
1.0

NOTES:

1.1-U1/1.1-A1 Applicable when the Reactor Head is removed and the Reactor Cavity is flooded.

1.1-S1 Applicable in Mode 5 when the Reactor Head is installed.

1.1-G2 The reactor will remain subcritical under all conditions without boron when:

- All control rods are inserted to or beyond position 02
- All control rods except one are inserted to or beyond position 00
- Determined by reactor engineering

CURVES/TABLES:

TABLE 1.1 - G2
MINIMUM ALTERNATE RPV FLOODING PRESS

NUMBER OF OPEN MSRVs	MARFP (PSIG)	
	UNIT 2	UNIT 3
6 or More	180	190
5	220	230
4	280	290

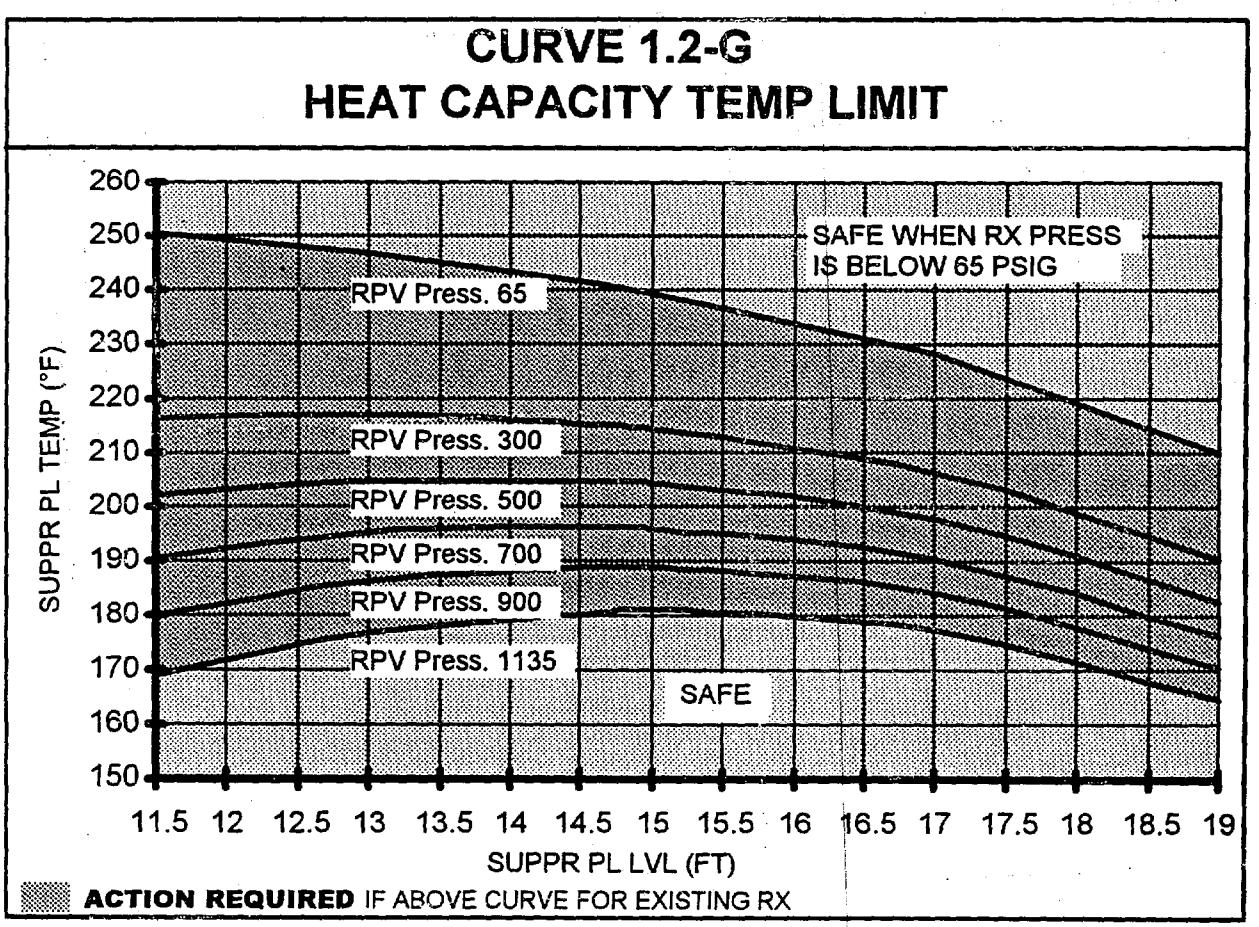
WATER LEVEL

DESCRIPTION	DESCRIPTION	
1.1-U1 N Uncontrolled water level decrease in Reactor Cavity with irradiated fuel assemblies expected to remain covered by water. OPERATING CONDITION: - Mode 5	**1.1-U2** Uncontrolled water level decrease in Spent Fuel Pool with irradiated fuel assemblies expected to remain covered by water. OPERATING CONDITION: - All	UNUSUAL EVENT
1.1-A1 N Uncontrolled water level decrease in Reactor Cavity expected to result in irradiated Fuel assemblies being uncovered. OPERATING CONDITION: - Mode 5	**1.1-A2** Uncontrolled water level decrease in Spent Fuel Storage Pool expected to result in irradiated fuel assemblies being uncovered. OPERATING CONDITION: - All	ALERT
1.1-S1 N Reactor water level CANNOT be maintained above -162 IN. (TAF) OPERATING CONDITION: - All	**1.1-S2** Reactor water level CANNOT be determined. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2	SITE EMERGENCY
1.1-G1 Reactor water level CANNOT be restored and maintained above: • UNIT 2 -190 IN. • UNIT 3 -185 IN. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2	**1.1-G2** T N Reactor water level CANNOT be determined **AND** EITHER of the following conditions exists: • The reactor will remain subcritical w/o boron under all conditions and Less than 4 MSRVs can be opened, or Reactor pressure CANNOT be restored and maintained at least 65 PSI above Suppression Chamber pressure. • It has NOT been determined that the reactor will remain subcritical w/o boron under all conditions and unable to restore and maintain MARFP in Table 1.1-G2. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2	GENERAL EMERGENCY

NOTES:

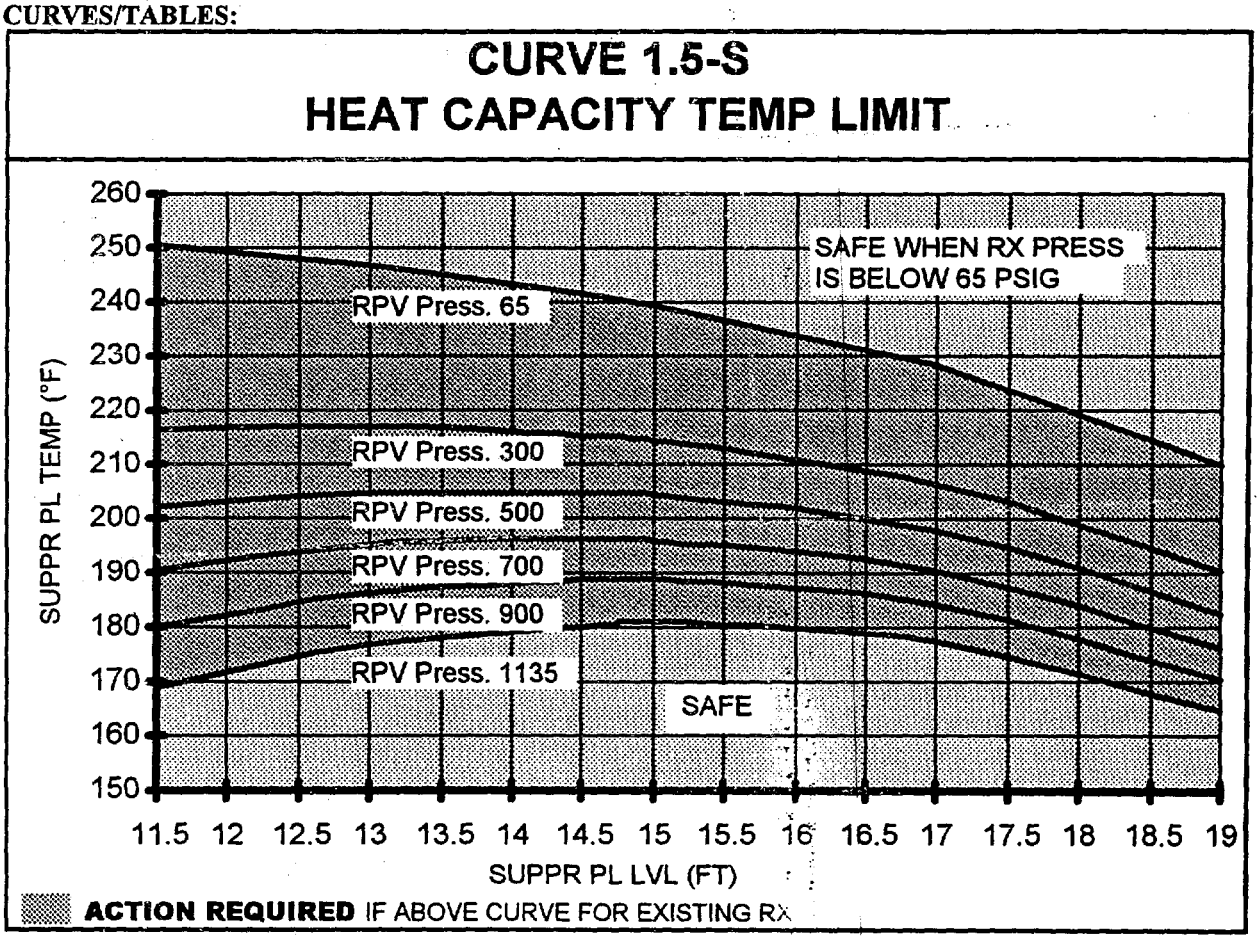
1.2 Subcritical is defined as Reactor power below the heating range and not trending upward.

CURVES/TABLES:



SCRAM FAILURE DESCRIPTION	REACTOR COOLANT ACTIVITY DESCRIPTION	
	1.3-U Reactor coolant activity exceeds 26 µCi/gm dose equivalent I-131 (Technical Specification Limit) as determined by chemistry sample. OPERATING CONDITION: - ALL	UNUSUAL EVENT
1.2-A N Failure of automatic scram functions to bring the Reactor subcritical **AND** Manual scram or ARI was successful. OPERATING CONDITION: - Mode 1 - Mode 2	**1.3-A** Reactor coolant activity exceeds 300 µCi/gm dose equivalent Iodine-131 as determined by chemistry sample. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2	ALERT
1.2-S N Failure of automatic scram, manual scram, and ARI to bring the Reactor subcritical. OPERATING CONDITION: - Mode 1		SITE EMERGENCY
1.2-G C Failure of automatic scram, manual scram, and ARI. Reactor power >3% **AND** EITHER of the following conditions exists: • Suppression Pool temp exceeds HCTL. Refer to Curve 1.2-G. • Reactor water level CANNOT be restored and maintained at or above: • UNIT 2 -190 IN. • UNIT 3 -185 IN. OPERATING CONDITION: - Mode 1 - Mode 2		GENERAL EMERGENCY

CURVES/TABLES:



MSL/OFFGAS RADIATION	LOSS OF DECAY HEAT REMOVAL	
DESCRIPTION	DESCRIPTION	
1.4-U Valid MAIN STEAM LINE RADIATION HIGH-HIGH alarm, RA-90-135C **OR** Valid OG PRETREATMENT RADIATION HIGH alarm, RA-90-157A. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2		UNUSUAL EVENT
	1.5A Reactor moderator temperature CANNOT be maintained below 212° F whenever Technical Specifications require Mode 4 conditions or during operations in Mode 5. OPERATING CONDITION: - Mode 4 - Mode 5	ALERT
	1.5-S C Suppression Pool temperature, level and RPV pressure CANNOT be maintained in the safe area of Curve 1.5-S. OPERATING CONDITION: - Mode 1 - Mode 3 - Mode 2	SITE EMERGENCY
		GENERAL EMERGENCY

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REACTOR
1.0

WATER LEVEL 1.1-U1

UNUSUAL EVENT

Uncontrolled water level decrease in Reactor Cavity with irradiated fuel assemblies expected to remain covered by water.

OPERATING CONDITION - Mode 5

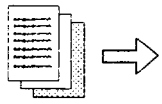
BASIS

This event classification only applies during Mode 5 when the Reactor Head is removed. For the purposes of this event classification the Reactor Cavity includes the cavity and the Reactor Vessel.

This event classification is anticipatory to 1.1-A1 and should only be considered if, in the opinion of the Site Emergency Director, the water level decrease is substantial enough to ultimately result in increased dose rates in the area of the Reactor Cavity due to loss of shielding by water covering irradiated fuel. Uncontrolled water level decrease during Mode 5 is indicative of valve manipulation error or failure of equipment in such a manner as to cause uncontrolled drainage of the Reactor Cavity. Uncontrolled water level decrease may be detected by the presence of the low level alarm in the spent fuel storage pool, visual observation, increased radiation levels or various other symptoms that the Site Emergency Director considers valid indicators of the event.

The degraded status of safety systems designed to makeup water to the Reactor Vessel is of particular concern during Mode 5 although plant Technical Specifications require minimum makeup systems be operable except with the spent fuel storage gates removed and water level $\geq$ 22 feet over the top of the reactor pressure vessel flange. These events tend to have long lead times relative to potential for release outside the site boundary, thus impact to public health and safety is very low. Classification as Unusual Event is warranted as a precursor to a more serious event.

Escalation to Alert is by actual uncovery of irradiated fuel assemblies.



WATER LEVEL 1.1-U1

UNUSUAL EVENT
(CONTINUED)

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-AU2 example -1)
Technical Specifications 3.5.2

NOTES

NOTE 1.1-U1/1.1-A1 Applicable when the Reactor Head is removed and the Reactor Cavity is flooded.

WATER LEVEL 1.1-U2

UNUSUAL EVENT

Uncontrolled water level decrease in Spent Fuel Storage Pool with irradiated fuel assemblies expected to remain covered by water.

OPERATING CONDITION - All

BASIS This event classification is anticipatory to 1.1-A2 and should only be considered if, in the opinion of the Site Emergency Director, the water level decrease is substantial enough to ultimately result in increased dose rates in the area of the Spent Fuel Storage Pool due to loss of shielding by water covering irradiated fuel. Uncontrolled water level decrease may be detected by the presence of the low level alarm in the spent fuel storage pool, visual observation, increased radiation levels or various other symptoms that the Site Emergency Director considers valid indicators of the event.

Uncontrolled water level decrease in Spent Fuel Storage Pools is indicative of failure of equipment in such a manner as to cause uncontrolled drainage. These events tend to have long lead times relative to potential for release outside the site boundary, thus impact to public health and safety is very low. Classification as Unusual Event is warranted as a precursor to a more serious event.

Escalation to Alert is by actual uncovery of irradiated fuel assemblies.

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-AU2 example-2)

WATER LEVEL 1.1-A1

ALERT

Uncontrolled water level decrease in Reactor Cavity expected to result in irradiated fuel assemblies being uncovered.

OPERATING CONDITION - Mode 5

BASIS

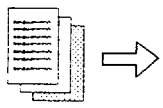
This event classification only applies during Mode 5 when the Reactor Head is removed. For the purposes of this event classification the Reactor Cavity includes the cavity and the Reactor Vessel.

Uncontrolled water level decrease during Mode 5 is indicative of valve manipulation error or failure of equipment in such a manner as to cause uncontrolled drainage of the Reactor Cavity. The degraded status of safety systems designed to makeup water to the Reactor Vessel is of particular concern during Mode 5 although plant Technical Specifications require minimum makeup systems be operable except with the spent fuel storage gates removed and water level $\geq$ 22 feet over the top of the reactor pressure vessel flange.

Uncontrolled water level decrease may be detected by visual observation, increased radiation levels or various other symptoms that the Site Emergency Director considers valid indicators of the event. Expected fuel uncovery may be detected by increased radiation levels, Visual observation, RPV level instrumentation expected to drop below -162 inches, or best judgement of the Site Emergency Director based on present and past events and trends.

Due to the long lead times associated with these events there is time available to take corrective actions, and there is little potential for substantial fuel damage. Significant exposures to onsite personnel is likely during these events and it is probable that additional personnel will be needed onsite; therefore the Alert classification is warranted.

Escalation is by Radiological Release event classifications.



WATER LEVEL 1.1-A1

ALERT
(CONTINUED)

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-AA2 example-3)
Technical Specifications 3.5.2

NOTES

NOTE 1.1-U1/1.1-A1 Applicable when the Reactor Head is removed and the Reactor Cavity is flooded.

WATER LEVEL 1.1-A2

ALERT

Uncontrolled water level decrease in Spent Fuel Storage Pool expected to result in irradiated fuel assemblies being uncovered.

OPERATING CONDITION - All

BASIS

Uncontrolled water level decrease in Spent Fuel Storage Pools is indicative of failure of equipment in such a manner as to cause uncontrolled drainage. These events tend to have long lead times relative to potential for release outside the site boundary, thus impact to public health and safety is very low.

Uncontrolled water level decrease may be detected by visual observation, increased radiation levels or various other symptoms that the Site Emergency Director considers valid indicators of the event. Expected fuel uncovery may be detected by increased radiation levels, Visual observation, or best judgement of the Site Emergency Director based on present and past events and trends.

There is time available to take corrective actions, and there is little potential for substantial fuel damage. Offsite exposures are expected to remain below the Environmental Protection Agency's Protective Action Guidelines; however, exposures to onsite personnel is of particular concern during this event; therefore the Alert classification is warranted.

Escalation is by Radiological Release event classifications.

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-AA2 example-4)

WATER LEVEL 1.1-S1

SITE AREA EMERGENCY

Reactor water level cannot be maintained above -162 in. (TAF).

OPERATING - ALL

BASIS

If Reactor water level cannot be maintained above TAF the potential exist for fuel cladding damage. Events most likely to result in coolant inventory loss to this extent are RCS boundary degradation events or station blackout events. For this event to be declared, RPV water level must have decreased or be trending to a value that, in the opinion of the Site Emergency Director, has resulted in or will result in some actual core uncovery. Additionally, the Site Emergency Director must have evidence that Reactor level has been or can be recovered to above TAF.

This event classification also applies in Mode 5 when the Reactor Vessel head is installed. Inadvertent draining of the Reactor Vessel is possible under these conditions due to valving errors associated with the RHR system or failures associated with isolation valves during alignment changes of systems connected to the Reactor Vessel below the normal water level.

The fact that the transient was severe enough to result in inability to maintain RPV level coupled with the anticipatory nature of this event classification as a precursor to more serious event warrants the Site Area Emergency event classification.

For events that occur during operation, escalation to General Emergency is based on inability to assure adequate core cooling by restoring and maintaining RPV water level following transients that have resulted in extreme RPV water level decrease. For events that occur during shutdown or Mode 5, escalation is by radioactive release event classifications.

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-FS, SS5, SS4, example-1)
- EOI Program Manual Section VI-J

NOTES

NOTE 1.1-S1 Applicable in Mode 5 when the Reactor Head is installed.

WATER LEVEL 1.1-S2

SITE AREA EMERGENCY

Reactor water level cannot be determined.

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

BASIS

Inability to determine Reactor water level during operation may be due to boiling in the reference or variable instrument legs, instrument power failures, or conflicting information from uncontrolled indicator oscillations.

This condition requires Reactor flooding following emergency depressurization. Adequate core cooling is assured by these measures. Due to the severity of these actions and the uncertainty of Reactor status it is appropriate to treat this as a potential loss for Reactor Coolant System and Fuel Cladding integrity; therefore, this event is appropriate for the Site Area Emergency classification.

Escalation to General Emergency is based on inability to assure adequate core cooling in this mode.

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-FS)
- EOI Program Manual Section VI-J

WATER LEVEL 1.1-G1

GENERAL EMERGENCY

Reactor water level CANNOT be restored and maintained above:

UNIT 2 -190 IN.
UNIT 3 -185 IN.

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

BASIS

If Reactor water level cannot be restored and maintained above the Minimum Steam Cooling Reactor Water Level (MSCRWL), core damage is possible due to inadequate steam generation, by the covered portion of the Reactor core, to remove decay heat and prevent cladding heatup to a point that results in clad failure.

For either of the above conditions to be met, the control room operators should have progressed in the execution of the EOIs to the point that all high pressure and all low pressure systems that are available within a reasonable time frame have been attempted and are unsuccessful in reversing the adverse RPV water level trend.

Events most likely to result in coolant inventory loss or loss of makeup capability to this extent are RCS boundary degradation events or events resulting from loss of multiple systems such as station blackout. During such transients or accidents the potential for Primary Containment failure increases substantially; therefore, the General Emergency classification is appropriate.

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-FG)
- EOI Program Manual Section VI-J

WATER LEVEL 1.1-G2

GENERAL EMERGENCY

Reactor water level CANNOT be determined

AND

EITHER of the following conditions exists:

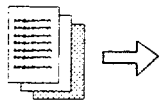
- **The reactor will remain subcritical w/o boron under all conditions.**
  and
  Less than 4 MSRVs can be opened, or Reactor pressure CANNOT be restored and maintained at least 65 PSI above Suppression Chamber pressure.

- **It has NOT been determined that the reactor will remain subcritical w/o boron under all conditions and unable to restore and maintain MARFP in Table 1.1-G2.**

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

BASIS Inability to determine Reactor water level during operation may be due to boiling in the reference or variable instrument legs, instrument power failures, or conflicting information from uncontrolled indicator oscillations. This condition requires Reactor flooding following emergency depressurization. It the reactor will remain subcritical without (w/o) boron under all conditions, adequate core cooling is assured only if at least 4 MSRVs are opened and Minimum Reactor Flooding Pressure (MRFP) is maintained with Reactor pressure at least 65 PSI above Suppression Chamber pressure. If it has not been determined that the reactor will remain subcritical without (w/o) boron under all conditions, adequate core cooling can only be assured when the Minimum Alternate Reactor Flooding Pressure (MARFP) is restored and maintained. If adequate core cooling is not assured core damage is probable under this scenario due to the extreme nature of the plant conditions that resulted in the inability to determine Reactor level (i.e., high containment temperatures, loss of multiple power supplies, etc.). Primary Containment integrity cannot be assured under all these conditions; therefore, the General Emergency classification is appropriate.

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-FG)
- EOI Program Manual Section VI-J



WATER LEVEL 1.1-G2

GENERAL EMERGENCY
(CONTINUED)

CURVES/TABLES

TABLE 1.1 - G2
MINIMUM ALTERNATE RPV FLOODING PRESS

NUMBER OF OPEN MSRVs	MARFP (PSIG)	
	UNIT 2	UNIT 3
6 or More	180	190
5	220	230
4	280	290

NOTES

NOTE 1.1-G2 The reactor will remain subcritical under all conditions w/o boron when:

- All control rods are inserted to or beyond position 02
- All control rods except one are inserted to or beyond position 00
- Determined by reactor engineering

SCRAM FAILURE 1.2-A

ALERT

Failure of automatic scram functions to bring the Reactor subcritical

AND

Manual scram or Alternate Rod Insertion (ARI) was successful.

OPERATING CONDITION - Mode 1
- Mode 2

BASIS

A manual scram is any set of actions by the Reactor Operator(s) at the Reactor Control Console which causes control rods to be rapidly inserted into the core and brings the Reactor subcritical.

This event classification indicates failure of the RPS to automatically scram the Reactor. This condition is more than a potential degradation of a safety system in that a front line automatic protection system did not function in response to a plant transient and thus plant safety has been compromised, and design limits of the fuel may have been exceeded.

An Alert is indicated because conditions exist that lead to potential loss of fuel clad or RCS barrier. Any set of actions by the Reactor Operator at Panel 9-5 that cause control rods to rapidly insert into the core and bring the Reactor subcritical is considered a manual scram.

Escalation to Site Area Emergency is based on fuel clad barrier or RCS barrier event classifications.

REFERENCE - Reg Guide 1.101 Rev. 3, (NUMARC-SA2)

NOTES

NOTE 1.2 Subcritical is defined as Reactor power below the heating range and not trending upward.

SCRAM FAILURE 1.2-S

SITE AREA EMERGENCY

Failure of automatic scram, manual scram, and ARI to bring the Reactor subcritical.

OPERATING CONDITION - Mode 1

BASIS Manual scram, and ARI are not considered successful if action away from the Reactor Control Console (Panel 9-5) was required to scram the Reactor.

A failure of the automatic and manual scram systems may result in the Reactor producing more heat than the maximum decay heat load for which the safety systems are designed. A Site Area Emergency classification is appropriate because conditions exist that lead to potential loss of both fuel clad and Reactor Coolant System (RCS) barriers. Therefore, this event classification ensures timely emergency response to the event before actual barriers loss has taken place.

Escalation to General Emergency is based upon inability to bring Reactor power within decay heat removal capability before Suppression Pool temperature reaches the Heat Capacity Temperature Limit (HCTL).

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-SS2, SS4 example -1)

NOTES

NOTE 1.2 Subcritical is defined as Reactor power below the heating range and not trending upward.

SCRAM FAILURE 1.2-G

GENERAL EMERGENCY

Failure of automatic scram, manual scram, and ARI. Reactor power > 3%.

AND

EITHER of the following conditions exists:

- **Suppression Pool temperature exceeds HCTL. Refer to curve 1.2-G.**
- **Reactor water level CANNOT be restored and maintained at or above:**
  UNIT 2 -190 IN.
  UNIT 3 -185 IN.

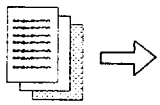
OPERATING - Mode 1
CONDITION - Mode 2

BASIS Automatic scram, manual scram, and ARI are not considered successful if action away from the Reactor Control Console was required to scram the Reactor.

Under these conditions all efforts, including boron injection, have been unsuccessful in bringing Reactor power within the decay heat removal capability of the Emergency Core Cooling Systems (ECCS). Additionally, an extreme challenge to the ability to cool the Reactor Core exist if Reactor Pressure Vessel (RPV) water level cannot be maintained sufficient to ensure adequate core cooling.

Another consideration is the inability to remove heat using the Main Condenser or Suppression Pool. In the event that neither heat sink is effective and Reactor power remains above this level, then a core melt sequence exists. In this situation, core degradation can occur rapidly; therefore, a General Emergency classification is appropriate in anticipation of degradation of multiple fission product barriers.

REFERENCES - Reg Guide 1.101 Rev. 3,(NUMARC-SG2)
- EOI Program Manual Section V-K and Section V-D

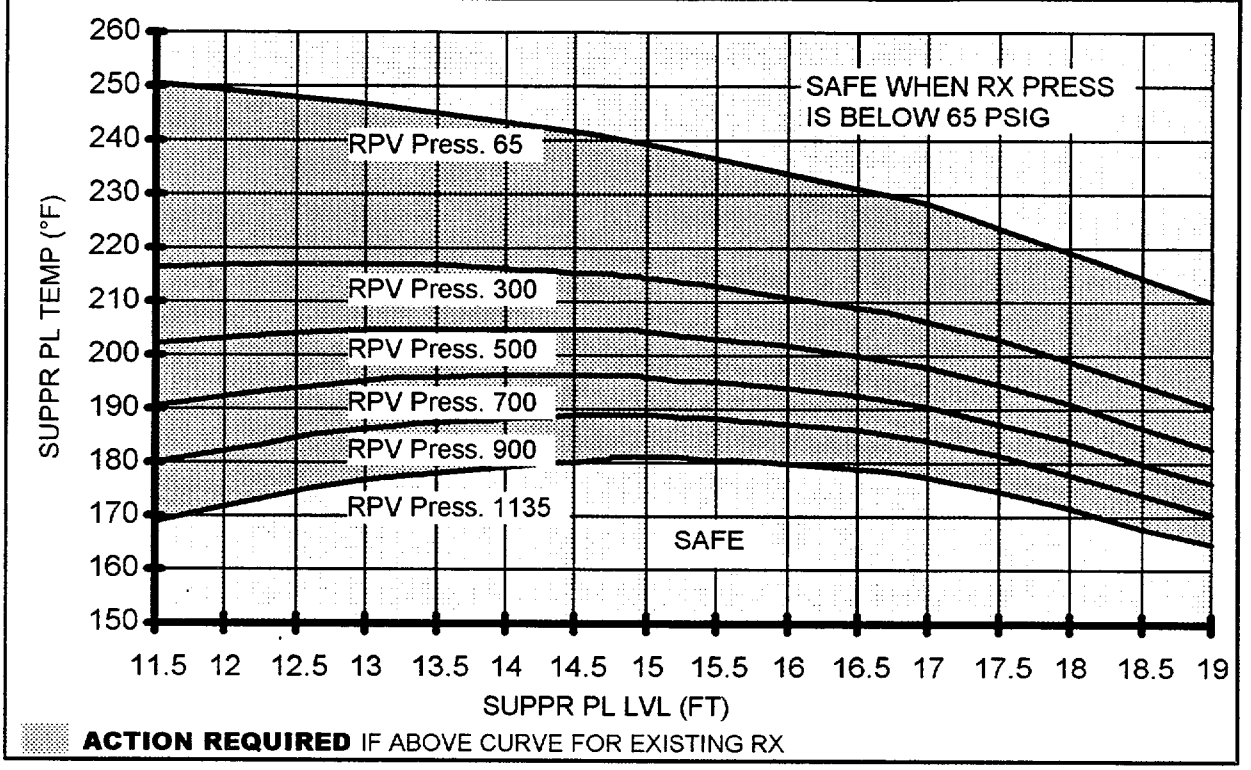


SCRAM FAILURE 1.2-G

GENERAL EMERGENCY
(CONTINUED)

CURVES/TABLES

CURVE 1.2-G
HEAT CAPACITY TEMP LIMIT



REACTOR COOLANT ACTIVITY 1.3-U

UNUSUAL EVENT

Reactor coolant activity exceeds 26 µCi/gm dose equivalent I-131 (Technical Specification limit) as determined by chemistry sample.

OPERATING CONDITION - All

BASIS Reactor coolant activity samples exceeding Technical Specification limits for Iodine spikes are representative of fuel clad degradation. An Unusual Event is declared because of potential degradation in the level of safety of the plant. Iodine levels exceeding Technical Specification limits are a potential precursor of more serious problems.

Escalation to Alert would be based on higher Reactor coolant activity values indicative of significant fuel failure.

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-SU4 example-2)
- Technical Specification 3.4.6

REACTOR COOLANT ACTIVITY 1.3-A

ALERT

Reactor coolant activity exceeds 300 µCi/gm dose equivalent Iodine-131 as determined by Chemistry sample.

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

BASIS

Reactor coolant activity samples exceeding 300 µCi/gm dose equivalent Iodine-131 are well above those expected for Iodine spikes and represent a significant loss of the fuel clad barrier. Any loss or potential loss of the fuel clad barrier warrants the declaration of an Alert.

Escalation to Site Area Emergency would be based on the conditions given above coupled with a loss or potential loss of either the Primary Containment or Reactor Coolant System barrier or Radiological Releases.

REFERENCE
- Reg Guide 1.101 Rev. 3, (NUMARC-FA)
- RIMS L36 921201 806

MSL/OFFGAS RADIATION 1.4-U

UNUSUAL EVENT

Valid MAIN STEAM LINE RADIATION HIGH-HIGH alarm, RA-90-135C
OR
Valid OG PRETREATMENT RADIATION HIGH alarm, RA-90-157A.

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

BASIS

Main Steam Line radiation high high or offgas radiation high is indicative of fuel cladding leakage.

The Main Steam Line radiation high high alarm setpoint is normally set at 3 times normal full power background. 3 times normal full power background is in excess of any spikes expected from operational transients that do not result in cladding failure. This alarm setpoint is substantially above that which would be indicative of fuel cladding damage above Technical Specification allowable limits; however, the presence of a valid alarm warrants declaration of an Unusual Event and consideration of other symptoms and event classifications for possible upgrade of the event based on fission product barrier loss.

The offgas pretreatment radiation high alarm setpoint is set at a value that is indicative of the ODCM allowable limits for radiation release.

Either of these conditions is considered a potential degradation in the level of safety of the plant and a potential precursor of a more serious problem.

Escalation to the Alert is based on either Reactor coolant samples exceeding 300 μCi/gm or Drywell radiation levels indicative of loss of the fuel cladding barrier.

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-SU4 example-1)

LOSS OF DECAY HEAT REMOVAL 1.5-A

ALERT

Reactor moderator temperature CANNOT be maintained below 212°F whenever Technical Specifications require Mode 4 conditions or during operations in Mode 5.

OPERATING - Mode 4
CONDITION - Mode 5

BASIS This event classification addresses loss of decay heat removal functions when Mode 4 is required or during Mode 5. Loss of decay heat removal capability can result in more serious consequences depending upon whether Primary Containment is in tact and Emergency Core Cooling System (ECCS) equipment status. In any condition where Mode 4 is required, loss of decay heat removal capability represents a significant degradation in plant conditions that can lead to fuel cladding damage or RCS degradation. In order to maintain anticipatory philosophy the Alert classification is appropriate for this event.

Escalation to Site Area Emergency or General Emergency is by loss of Reactor water level that has or will uncover the fuel or Radiological Release Event classification.

REFERENCES - Reg Guide 1.101 Rev. 3, (NUMARC-SA3)

LOSS OF DECAY HEAT REMOVAL 1.5-S

SITE AREA EMERGENCY

Suppression Pool temperature, level and RPV pressure CANNOT be maintained in the safe area of Curve 1.5-S (Heat Capacity Temperature Limit)

OPERATING CONDITION
- Mode 1
- Mode 2
- Mode 3

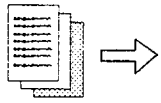
BASIS

Suppression Pool temperature is limited by Curve 1.5-S as a function of suppression pool level and reactor pressure in order to preclude failure of Primary Containment or equipment necessary for the safe shutdown of the plant following emergency depressurization. When Suppression Pool temperature cannot be maintained below the limits of the curve corresponding to existing suppression pool level and reactor pressure, emergency depressurization is required and continued decay heat removal at operating temperature and pressure is no longer permissible.

Suppression Pool level is limited by Curve 1.5-S to the range of 11.5 feet to 19 feet in order to preclude failure of Primary Containment or equipment necessary for the safe shutdown of the plant and preserve the pressure suppression function of the containment for possible future emergency depressurization. When Suppression Pool level cannot be maintained within the limits of the curve, continued decay heat removal at operating pressures and temperatures is no longer permissible and emergency depressurization is required.

Exceeding the limits of Curve 1.5-S represents a loss of heat sink for decay heat removal and inability to maintain Mode 3. Under these conditions there is an actual failure of systems intended for protection of the public; therefore, Site Area Emergency is warranted. Escalation to General Emergency is by Abnormal Rad levels, Radiological Release or Primary Containment failure events .

REFERENCES
- Reg Guide 1.101 Rev. 3, (NUMARC-SS4)
- EOI Program Manual Sections VI-C and VI-F



LOSS OF DECAY HEAT REMOVAL 1.5-S

SITE AREA EMERGENCY
(CONTINUED)

CURVES/TABLES