ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8806060152 DOC.DATE: 88/05/31 NOTARIZED: YES DOCKET #
FACIL:50-259 Browns Ferry Nuclear Power Station, Unit 1, Tennessee 05000259
50-260 Browns Ferry Nuclear Power Station, Unit 2, Tennessee 05000260
50-296 Browns Ferry Nuclear Power Station, Unit 3, Tennessee 05000296
AUTH.NAME AUTHOR AFFILIATION
GRIDLEY,R. Tennessee Valley Authority
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Application for amends to Licenses DPR-33,DPR-52 & DPR-68 changing Tech Specs 240.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 2+100
TITLE: OR Submittal: General Distribution

NOTES:G.Zech 3 cy. 1 cy. ea to: Ebneter,Axelrad,S.Richardson 05000259
B.D.Liaw,K.Barr, OI.
G.Zech 3 cy. 1 cy. ea to: Ebneter,Axelrad,S.Richardson, 05000260
B.D.Liaw,K.Barr, OI.
G.Zech 3 cy. 1 cy. ea to: Ebneter,Axelrad,S.Richardson, 05000296
B.D.Liaw,K.Barr, OI.
Encl. 1: see Reports

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	JAMERSON,C	1	0	PD	5	5
	MORAN,D	1	1	GEARS,G	1	1
INTERNAL:	ACRS	6	6	ARM/DAF/LFMB	1	0
	NRR/DEST/ADS 7E	1	1	NRR/DEST/CEB 8H	1	1
	NRR/DEST/ESB 8D	1	1	NRR/DEST/MTB 9H	1	1
	NRR/DEST/RSB 8E	1	1	NRR/DOEA/TSB 11	1	1
	NRR/PMAS/ILRB12	1	1	NUDOCS-ABSTRACT	1	1
	OGC 15-B-18	1	0	REG FILE 01	1	1
	RES/DE/EIB	1	1			
EXTERNAL:	LPDR	1	1	NRC PDR	1	1
	NSIC	1	1			
NOTES:		9	9			

w/check
#150
#25146

TOTAL NUMBER OF COPIES REQUIRED: LTTR 38 ENCL 35

RIDS/ADDS

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
5N 157B Lookout Place

MAY 31 1988

TVA-BFN-TS-111 10 CFR 50.90

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

Gentlemen:

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 - TVA BFN TECHNICAL SPECIFICATION NO. 240 - CLARIFICATION OF REACTOR MODE - TAC NO. 00068, 00069, AND 00070

In accordance with the provisions of 10 CFR 50.4 and 50.90, we are submitting a request for an amendment to licenses DPR-33, DPR-52, and DPR-68 to change the BFN Technical Specifications for units 1, 2, and 3 (enclosure 1).

The proposed amendment changes definitions and adds notes to remove ambiguity from the definitions of Mode of Operation, Core Alteration, and Reactor Conditions. The term prior to startup is defined. This amendment has been identified as a restart requirement. Description, reason for change, and justification are provided in enclosure 2. A proposed determination of no significant hazards consideration is provided in enclosure 3.

Enclosed is a check for the $150 amendment fee required by 10 CFR Part 170.12. We request that these specifications be made effective 90 days after issuance because of the number of procedure revisions required.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley

R. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Sworn to and subscribed before me
this 31st day of May 1988.

Paulette H. White
Notary Public

My Commission Expires 8-24-88

A001 w/ check $150 #25146

Enclosures
cc: See page 2

U.S. Nuclear Regulatory Commission

cc (Enclosures):
Mr. K. P. Barr, Acting Assistant Director
for Inspection Programs
TVA Projects Division
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. Charles R. Christopher
Chairman, Limestone County Commission
P.O. Box 188
Athens, Alabama 35611

Dr. C. E. Fox
State Health Officer
State Department of Public Health
State Office Building
Montgomery, Alabama 36104

Mr. J. E. Jones
General Electric Company
No. 1 Union Square
808 Krystal Building
Chattanooga, Tennessee 37402

Mr. G. G. Zech, Assistant Director
for Projects
TVA Projects Division
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

Browns Ferry Resident Inspector
Browns Ferry Nuclear Plant
Route 12, P.O. Box 637
Athens, Alabama 35611

ENCLOSURE 2

DESCRIPTION AND JUSTIFICATION
BROWNS FERRY NUCLEAR PLANT (BFN)

Description of Change

This proposed change to the BFN Technical Specifications definitions consists of four complementary parts that apply to all three units.

A. First, changes are proposed for definitions 1.0.M, 1.0.M.1, 1.0.M.2, 1.0.M.3, and 1.0.M.4 to:

   1. Directly link the mode of operation to the position of the reactor mode switch,

   2. Add notes which permit the unit to remain in a mode of operation while the reactor mode switch is temporarily moved to another position,

   3. Make these definitions applicable only when there is fuel in the reactor vessel and consider the reactor not to be in any defined mode of operation or operational condition with no restrictions on reactor mode switch position or operability when there is no fuel in the reactor vessel, and

   4. Delete extraneous information which describes the selection functions of the reactor mode switch.

B. The second change is to definition 1.0.S, core alterations, to make this definition:

   1. Applicable only to fuel, sources, incore instruments, and reactivity controls within the reactor pressure vessel,

   2. Applicable only when the vessel head is removed,

   3. Applicable only when fuel is in the vessel, and

   4. Specifically permit core alterations to be completed as necessary to leave the unit in a safe conservative condition when the suspension of core alterations is required.

C. The third area of change involves the definitions 1.0.D, 1.0.H, 1.0.I, 1.0.J, 1.0.K, 1.0.L, and 1.0.X. These are definitions for various reactor conditions. They are being revised to be consistent with the changes proposed for definition 1.0.M previously described and to obtain consistency and completeness throughout the definitions. A new definition, 1.0.D, is being added to define the phrase "prior to startup."

Description of Change (Cont'd)

1. Definition 1.0.H, reactor power operation, is changed to reference the startup/hot standby and run modes instead of the mode switch positions of startup/hot standby and run.

2. Definition 1.0.I, hot standby condition, is relocated to be the new definition 1.0.J. It is revised to reference the reactor mode instead of the mode switch position, to delete any reference to reactor pressure and main steam isolation valve position, and to allow temperature to be below 212° F. A note has been added to this definition to help distinguish between hot standby and startup conditions.

3. The new definition 1.0.I will define the term startup condition as when the withdrawal of control rods for the purpose of making the reactor critical has begun, reactor power is less than or equal to one percent of rated, and the reactor is in the startup/hot standby mode.

4. Definition 1.0.J, cold condition, is relocated to be the new definition 1.0.L. It is also revised to explicitly state that it is applicable to any mode of operation.

5. Definitions 1.0.K, 1.0.L, and 1.0.X, hot shutdown, cold shutdown, and shutdown respectively, are revised and combined into the new definition 1.0.K for shutdown condition. The new shutdown condition definition includes two subdivisions--hot shutdown condition and cold shutdown condition. The new definition of shutdown conditions include the refueling mode as well as the shutdown mode. The two subdivisions will reference the shutdown condition instead of the shutdown mode.

6. The new definition 1.0.D will define the phrase "prior to startup" as meaning prior to the withdrawal of control rods for the purpose of making the reactor critical.

D. The fourth area of change involves making the remainder of the technical specification consistent with the revised definitions. This will necessitate the revision of a number of limiting conditions for operation and surveillance requirements.

1. Specification 3.1.A states that various Reactor Protection System channels must be operable for each position of the mode switch in table 3.1.A. This is being changed to reference the mode of operation instead of mode switch position.

2. Note (8) to table 3.2.f for unit 2 is being changed to reference the startup condition and hot standby condition instead of "startup," and also to add "reactor" to "power operation."

3. Specification 3.3.B.1 requires each control rod to be coupled to its drive or completely inserted and disarmed except in the refuel condition when the reactor is vented. This condition is being changed to reference the shutdown condition instead of refuel condition.

Description of Change (Cont'd)

4. Specification 3.7.A.1.f requires that the reactor be scrammed if torus water temperature exceeds 110° F in startup or power operations. These conditions are being changed to "startup condition, hot standby condition (with all control rods not inserted), and reactor power operations." In addition, 3.7.A.1.e and f are changed so that required actions are in order of increasing suppression pool temperature.

5. Specification 3.7.G.2 requires the Containment Atmosphere Dilution System to be operable with the mode switch in run. This is being changed to reference the run mode.

6. The following specifications, which currently employ phrases such as "prior to reactor startup," "prior to each startup," or "prior to a startup," are being changed to use the newly defined term "prior to startup": 4.3.F.1.a, 3.5.A.1.(1), 3.5.A.4, 3.5.B.1.(1), 3.5.B.14, 3.5.C.1, 3.5.G.1.(1).

7. The following specifications, which currently employ phrases such as "reactor operation," or "power operation," are being changed to reference the explicitly defined phrase "reactor power operation": 3.3.B.2, 3.3.F.2, 3.5.C.3, 3.7.B.3, 3.7.E.3, 3.9.B.3, 3.9.B.4, 3.9.B.5, 3.9.B.6, 3.9.B.7, 3.9.B.8 (units 1 and 2 only), 3.9.B.9 (units 1 and 2 only), 3.9.B.11 (unit 3 only), 3.9.B.13 (units 1 and 2 only).

8. The following specifications, which currently employ phrases such as "shutdown" or "shutdown in the cold condition," are being changed to reference the explicitly defined terms "shutdown condition" or "cold shutdown condition," as applicable: notes for table 3.2.F, 3.3.D, 3.3.E, 3.5.A.3, 3.5.B.8, 4.5.B.14, 3.6.B.3.c, 3.6.C.3, 3.6.E.1, 3.7.A.1.c, 3.9.B.3, 3.9.B.4, 3.9.B.12, 3.9.B.13 (unit 3 only), 3.9.B.14 (units 1 and 2 only), 3.9.B.15 (units 1 and 2 only).

9. The following specifications, which currently employ the word "startup" are being changed to reference the newly defined term "startup condition": 3.6.B.4, 4.6.B.3.a (unit 3 only), 4.6.B.6.a (units 1 and 2 only).

10. The following specifications, which currently employ the words "hot standby" are being changed to reference the newly defined term "hot standby condition": 3.3.F.3, 3.9.B.12 (units 1 and 2), 3.9.B.10 (unit 3).

Additionally, on all pages which are submitted for change, any terms or phrases which are defined in the technical specification definitions section (section 1.0) will be printed entirely in upper case letters. Since this method of highlighting terms with explicit meanings within the technical specification is used in Standard Technical Specifications, and since no changes in wording are proposed, no reason for change or justification will be given for these conversions from lower case to upper case letters.

Reason for Change

A.1 Definitions 1.0.H, 1.0.I, 1.0.M, and 1.0.X imply a direct association of the mode of operation with the position of reactor mode switch. This proposed change will clarify the direct link which is not stated in the current definitions.

2 Certain tests and other operations require that the reactor mode switch be in a certain position. When the position of the mode switch necessary for performance of a test or other operation is different than the position of the mode switch required by the current mode of operation, a conflict of requirements exists. The notes added to the definition will permit the position of the mode switch to be temporarily changed for performance of a test or other operation while the unit does not change its mode of operation, provided that compensatory administrative requirements are met.

3. Definition 1.0.M may currently be understood to apply even though no fuel is in the reactor vessel. Such an interpretation imposes unreasonable operational restraints on the plant.

4. Definitions 1.0.M.1, 1.0.M.2, 1.0.M.3, and 1.0.M.4 contain extraneous information which describes the function of the reactor mode switch position applicable to each mode of operation. This extraneous information serves no purpose. This change will eliminate this information to better focus on the intent of these definitions.

B. Definition 1.0.S does not specifically identify the components to which it is applicable nor does it specify the plant conditions under which it is applicable. In addition, the definition does not specify what actions may be taken when core alterations must be suspended while a component is being handled.

C. Definitions 1.0.H, 1.0.I, 1.0.J, 1.0.K, 1.0.L, and 1.0.X are inconsistent among themselves and with other definitions and do not correlate directly with the proposed change to definition 1.0.M. The definitions for "prior to startup" and "startup condition" are needed to clarify these often used terms and provide an all inclusive set of reactor conditions.

D. These changes are to correct inappropriate references in the technical specifications to mode switch position, hot standby condition, and refuel condition. Many of the changes are to use wording in the body of the technical specification which match the defined terms while retaining the original intent of the specifications.

Justification for Changes

A. The proposed changes to definition 1.0.M, mode of operation, will directly link the mode of operation to a position of the reactor mode switch. This link is implied, but not directly stated in the current definitions by describing the protective system and refuel interlock functions which are in effect for each mode switch position. This change is needed to eliminate extraneous information which serves no useful purpose in this section so that each mode of operation is defined in a straightforward manner. This change is justified in that the intent and requirements of this section are not changed from those which currently appear in the technical specifications.

These proposed changes to definition 1.0.M will allow the unit to be considered not in any mode of operation when there is no fuel in the reactor vessel. Hence, the reactor mode switch may be in any position or be inoperable. When there is no fuel in or above the reactor vessel, no fuel related accident can occur in the reactor vessel, so the reactor mode switch affords no protective function to the plant in this situation. Since the reactor mode switch provides no protection with the reactor vessel defueled, there is no reason to restrict it to any position or to require its operability. This proposed change will allow the reactor mode switch position to be changed or the switch disabled as necessary to permit testing and maintenance on a defueled unit without imposing restrictions on that unit which provide no safety function.

Footnote (1) will allow moving the mode switch to any position to perform required tests or maintenance without changing the mode of operation, provided that all control rods are verified to remain fully inserted (second person verification by a licensed operator or other technically qualified member of the plant staff of the all rods in condition is required). This note is necessary to allow testing or maintenance which may require the mode switch to be in a position other than that for the current mode of operation. This note will apply to the shutdown, refuel, and startup/hot standby modes (with all rods in). With the reactor mode switch in the shutdown position, the reactor is designed to be shutdown (i.e., subcritical) with all control rods fully inserted. To enforce this condition, the mode switch in the shutdown position provides a scram signal to the Reactor Protection System (bypassed after two seconds) and a rod withdrawal block signal so that all control rods will remain fully inserted which is the intent of the shutdown mode. The administrative requirement for second person verification that all rods remain fully inserted will effectively compensate for the scram and rod block signals which will be bypassed when the mode switch is moved from the shutdown position. Therefore, the use of this note for the shutdown mode will not allow any plant conditions different from those currently allowed by the technical specifications. With the mode switch in the refuel position, interlocks ensure that during fuel movements in or over the core all control rods remain fully inserted and that no more than one control rod can be withdrawn from its fully inserted position. The administrative requirement for second person verification of the all rods in condition will clearly meet the intended function of these interlocks when the

Justification for Changes (Cont'd)

interlocks are bypassed by moving the mode switch from the refuel position. Therefore, the use of this note for the refuel mode will meet the safety design basis of the refueling interlocks and will not allow any plant conditions different from those currently allowed by the technical specifications. In the startup/hot standby position, the mode switch selects the neutron monitoring system scrams for low neutron flux level operation, such as the average power range monitor (APRM) 15 percent power scram and the intermediate range monitor (IRM) 120/125 of scale scram. The administrative requirement for second person verification of the all-rods-in condition will clearly provide the protection against high heat generation rates normally afforded by these scrams since the reactor will remain subcritical during the time these scrams are bypassed by moving the mode switch from the startup/hot standby position. Therefore, the use of this note for the startup/hot standby mode will not allow any plant conditions different from those allowed by the current technical specifications. Since, for all of its proposed applications, the addition of footnote (1) to this definition will not allow any plant conditions to exist which are different from those currently allowed by the technical specifications. This proposed change will not adversely affect nuclear safety.

Footnote (2) relating to the mode of operation definition will allow placing the mode switch in the refuel position to perform maintenance on a single control rod drive per specification 3.10.A.5 if the reactor coolant temperature is below 212° F. This note applies to the shutdown mode only, and the reactor would be considered to be in the shutdown mode with the mode switch in the refuel position under the terms of this note. The proposed note requires that all refueling interlocks be operable (per specification 3.10.A.1) so that the one-rod-out interlock of the refuel position will prevent any further control rod withdrawal if any single rod is not at its fully inserted position. Since this note will be used to remove control rod drives from the reactor vessel, the control blade associated with that drive will be disabled in the fully withdrawn position and will temporarily be incapable of being inserted. To compensate for this condition, the control rods which are face adjacent and diagonally adjacent to the withdrawn rod will be electrically disarmed in the full-in position per specification 3.10.A.5 since these rods would have the highest control rod worths. In this manner, it is ensured that the reactor will remain subcritical since the shutdown margin analysis assumes a single-rod-out condition. Thus, since it is ensured that the reactor, in the shutdown mode, will remain subcritical with the required shutdown margin, no assumptions for any accident analysis are changed, and the addition of this footnote will not adversely impact nuclear safety. The use of this note would only be allowed in the cold condition, so that it would be similar in scope to note ## of table 1.2 in General Electric (BWR-4) Standard Technical specifications (GE-STS, NUREG-0123).

Justification for Changes (Cont'd)

Footnote (3) relating to the mode of operation definition will allow placing the mode switch in the refuel position to recouple or withdraw a single control rod provided that the one-rod-out interlock is operable. This note applies to the shutdown mode only, and the reactor will be considered to be in the shutdown mode with the mode switch in the refuel position under the terms of this note. Since the proposed note requires the one-rod-out interlock of the refuel mode switch position to be operable, no more than one control rod will be withdrawn from the full-in position at a time. This interlock will ensure that the reactor will remain subcritical at all times, since the shutdown margin analysis assumes a single rod-out condition. Control rod drives which are moved under the terms of this note will be operable so the adjacent drives need not be disarmed. Since it is assured that the reactor in the shutdown mode will remain subcritical with the required shutdown margin, no assumptions of any accident analysis are changed, and the addition of this footnote will not adversely affect nuclear safety. This note is similar in scope to note *** of table 1.2 in GE-STS, NUREG-0123.

Footnote (4) relating to the mode of operation definition will allow placing the mode switch in the startup/hot standby position to test the rod worth minimizer (RWM) and the Rod Sequence Control System (RSCS). This note applies to the shutdown mode only, and the reactor would be considered to be in the shutdown mode with the mode switch in the startup/hot standby position. This exception is necessary because certain features of the RWM and RSCS cannot be tested unless the mode switch is placed in the startup/hot standby position. The testing required involves selection and withdrawal of control rods to verify that the RWM and RSCS are enforcing rod patterns correctly. Since this test will only have one rod withdrawn from its fully inserted position at a time, the reactor cannot achieve criticality and the intent of the shutdown mode will be maintained. The addition of this note will only clarify existing requirements for testing of the RWM and RSCS and will not change any procedures for operation or testing of these systems. Since this note only clarifies existing surveillance requirements, but does not change their intent or application, it will not adversely impact nuclear safety. This exception to the mode switch position is adapted from GE-STS 3.1.4.1 and 3.1.4.2.

B. The changes to definition 1.0.S, core alterations, are proposed to clarify the components to which this definition will apply. Core alterations will be limited to fuel, sources, incore instruments, and reactivity controls, which are the components which can contribute to an accident during core alterations. Handling of components such as cameras or tools within the reactor vessel would not be considered a core alteration since these components can not contribute to an accident while being handled in the vessel. The times to which this definition would apply will be limited to when the vessel head is removed and when fuel is in the vessel. The interlocks and systems which are required to be in effect during core alterations provide no protective function when the vessel head is in place or when there is no fuel in the vessel, so there is no reason to extend this definition to these conditions. In addition, the proposed

Justification for Changes (Cont'd)

changes will allow completion of a movement of a component to a safe conservative position when core alterations are suspended. This change will prevent leaving a component in an intermediate position (such as a fuel bundle suspended from the refueling bridge) for an extended period of time. This addition will not allow any new moves to be initiated when core alterations are suspended. Since all of these proposed changes to specification 1.0.S are clarification only, the intent of this definition is unchanged and there is no impact on nuclear safety.

C.1 The proposed definition 1.0.H, reactor power operation, is only changed to reference the startup/hot standby and run modes instead of mode switch positions of startup and run. This is a necessary administrative change to provide consistency between the mode and condition definitions. This proposed amendment in no way changes the intent of the current definition, so it will not adversely affect nuclear safety.

C.2 The proposed definition 1.0.J, hot standby condition, will alter the current definition of hot standby to remove the reference to reactor vessel pressure being limited to 1055 psig and remove the reference to the main steam isolation valve (MSIV) position. This definition is necessary to describe the condition of the reactor at low power levels such as prior to entering the startup condition, and during a controlled shutdown after reactor power drops below one percent of rated thermal power in the startup/hot standby mode. This condition is defined similarly to the startup condition, but the distinction between the two is found in the intended condition of operation toward which the reactor is proceeding. For example, if an equipment malfunction results in an operator reducing power below one percent of rated thermal power in the startup/hot standby mode to meet the terms of the generic LCO found in definition 1.0.C, the reactor will be in the hot standby condition and not in the startup condition (even though the reactor may still be critical). If the equipment malfunction is remedied and the operator then begins to withdraw control rods to increase power, the reactor will then be in the startup condition and not in the hot standby condition, although the physical configuration of the plant has not changed. A note has been added to the hot standby definition to make this distinction clear in the technical specification.

The deletion of the reference to reactor vessel pressure found in the current definition of the hot standby condition will not change plant operation or requirements in any way. This reference serves no purpose in the definitions section, since vessel pressure limits are well documented in other sections of technical specification (such as the limiting safety system settings for relief valve setpoints and nuclear system high pressure scram setpoint, and table 3.1.A for RPS scram instrumentation requirements) and other design documents. This change is justified because the change only removes extraneous information from this definition and does not reduce requirements in any way.

Justification for Changes (Cont'd)

The deletion of the requirement to have MSIVs closed in the hot standby condition will allow the reactor to use the main condenser as a heat sink in this condition. The existing requirement to have the MSIVs closed has made the hot standby condition an undesirable condition because it isolates the reactor from the main condenser (its normal source of heat removal) and forces the use of relief valves to control reactor pressure. Since no accident or transient analysis involving MSIV closure assumes that the MSIVs are closed initially, and since this change will not affect any MSIV isolation function, no assumptions used in any accident for transient analysis are invalidated by this proposed change. Therefore, there is no effect on nuclear safety resulting from allowing the MSIVs to be open in the hot standby condition.

The change to allow reactor coolant temperature to drop below 212° F is to provide a defined condition for the reactor when it is in the startup/hot standby mode, power is less than one percent, but control rods are not being withdrawn for the purpose of making the reactor critical or increasing power. This change is necessary to provide completeness in the definitions. This change will allow the reactor to be in a cold, more conservative state while in the hot standby condition. This change is justified since there is no safety significance to allowing reactor coolant temperature to drop below 212° F as this is only an arbitrarily selected point of reference. Hence, this change will not affect nuclear safety.

C.3 The proposed definition 1.0.I, startup condition, will define the condition of starting up, as opposed to the startup mode. This condition will be in existence when the reactor is in the startup/hot standby mode, reactor power is less than one percent of rated thermal power, and when the withdrawal of control rods for the purpose of making the reactor critical has begun. This definition is necessary to describe the condition of the reactor between the time of initially withdrawing control rods and the time of reaching reactor power operation. This proposed definition is justifiable because it is consistent with safe operation for all of its applications within the technical specifications, as noted in the following paragraphs:

Note (8) for table 3.2.F requires high range primary containment radiation recorders and wide range gaseous effluent radiation monitors to be in operation in the startup condition (among others). These radiation recorders/monitors are designed for postaccident monitoring of radiation levels. These monitors do not perform any function before startup, since the accidents for which they were designed could not be initiated from this condition. Hence, this proposed definition would still require these monitors to be operable at the times they were intended to be operable, and the intent of the current technical specifications is unchanged.

Justification for Changes (Cont'd)

Specification 3.6.B.4 establishes coolant chemistry limits for a depressurized reactor, but specifically does not apply to the startup condition. Once rod withdrawal for the purpose of making the reactor critical has begun, the intention to pressurize the reactor vessel has been demonstrated, so the more restrictive limits of 3.6.B.1 are applicable. However, before rod withdrawal has begun, the reactor is in physically the same state as if it were in the cold shutdown condition so the less restrictive limits of 3.6.B.4 apply. For this application, the proposed definition of startup condition would not result in any physical plant configurations different from those currently allowed by the technical specification.

Specification 4.6.B.6.a (units 1 and 2) and 4.6.B.3.a (unit 3) require additional surveillance of the reactor coolant chemistry under startup conditions. The LCO associated with this surveillance requirement 3.6.B.6 (units 1 and 2) and 3.6.B.5 (unit 3) is applicable only when the reactor is critical. This can only occur after control rod withdrawal with intent to go critical has begun, so the proposed definition of startup condition does not change the intent of specification 4.6.B.6.a (units 1, and 2) and 4.6.B.3.a (unit 3) and will not adversely affect nuclear safety.

Specification 3.7.A.1.f requires a reactor scram during startup (among other conditions) if the suppression pool water temperature exceeds 110° F. The "startup" referred to in this specification is the startup condition, not the startup mode, since initiating a reactor scram accomplishes nothing unless control rod withdrawal for the purpose of going critical has begun. Therefore, the proposed definition of startup condition does not change the intent of this specification. As part of this amendment request, the "startup" in this specification will be changed to "startup conditions, hot standby conditions (with all rods not fully inserted)" to clarify the intention. See justification D.5 for additional information.

C.4 The proposed definition 1.0.L, cold condition, is revised to explicitly state its applicability in any mode of operation. This is an administrative change that does not alter any current technical specification requirements or allow any new operational conditions, so this change will not have any impact on nuclear safety.

C.5 The proposed definition 1.0.K, shutdown condition, will provide an explicit definition for the shutdown condition and will consolidate the hot shutdown and cold shutdown definitions into one section. This definition will allow the reactor to be in the shutdown mode or in the refuel mode and be considered in the shutdown condition. In this condition, the reactor mode switch will be in the shutdown or refuel positions, with the only exceptions as provided by the notes to definition 1.0.H (already discussed). These mode switch positions will allow at most only one control rod to be withdrawn from the fully inserted position at a time. Thus, since the reactor is analyzed for adequate shutdown margin with the analytically determined highest worth rod fully withdrawn, it is ensured that the reactor will always be subcritical while in the shutdown condition.

Justification for Changes (Cont'd)

The hot shutdown condition will simply be defined as the condition which exists when the reactor is in the shutdown condition with average reactor coolant temperature greater than 212° F. This is similar to the current definition of hot shutdown, with the exception that the new definition of shutdown condition will be referenced instead of the shutdown mode. The intention of this definition is not changed by this amendment request since, as before, the reactor will always be subcritical with average coolant temperature above 212° F when in the hot shutdown condition.

The cold shutdown condition will simply be defined as the condition which exists when the reactor is in the shutdown condition with average reactor coolant temperature equal to or less than 212° F. This is similar to the current definition of cold shutdown, with the exception that the new definition of shutdown condition will be referenced instead of the shutdown mode. The intention of this definition is not changed by this amendment request since, as before, the reactor will always be subcritical with average coolant temperature equal to or less than 212° F when in the cold shutdown condition.

C.6 The proposed definition 1.0.D, prior to startup, will provide a definition of the phrase "prior to startup" to explicitly state the intention of this frequently used phrase. Prior to startup will be defined as prior to the withdrawal of control rods for the purpose of going critical. Hence the "startup" used in this phrase will be referring to the startup condition, and not to the startup mode. This definition is necessary to make this distinction between modes and conditions. This change is justified because it is consistent with safe operation for all of its applications within the technical specifications, as is noted in the following paragraphs.

The phrase "prior to startup" appears in the LCO for the Core Spray System (CSS), the RHR, the HPCI, the RCIC, and the Automatic Depressurization System (ADS). Each of these core and containment cooling systems is required by the technical specifications to be operable prior to startup from a cold condition (the actual wording in the current technical specification uses "prior to reactor startup" or "prior to a startup," but these will all be changed to simply read "prior to startup" as a part of this package). By the proposed definition, these systems would be required to be operable before withdrawing control rods with the intention of going critical. With the reactor in a cold condition and with all control rods inserted (before being withdrawn for the purpose of going critical), the reactor is physically in the same condition as if it were in cold shutdown. In the cold shutdown condition, these core and containment cooling systems are not required to be operable. Therefore, this proposed changes will not allow any physical plant configuration different from those currently allowed by the technical specifications. Hence, as it applies to these LCOs, this proposed definition will not have any impact on nuclear safety.

Justification for Changes (Cont'd)

Specification 3.6.B.1 establishes coolant chemistry limits for conductivity and chlorides which must be met prior to startup and at low steaming rates. The proposed definition for "prior to startup" will make this specification applicable before withdrawing control rods with the intent to go critical. Until this time, the reactor will physically be in the same condition as if it were in the shutdown condition and the chemistry limits for this condition would be applicable. Thus, this proposed definition, for this application, would not result in any physical plant conditions different from those currently allowed by the technical specifications, and therefore would not affect nuclear safety.

D.1 The change to specification 3.1.A is proposed to correct a reference within this specification. This specification currently references each "position of the mode switch" as given in table 3.1.A. However, table 3.1.A lists each "mode of operation" as opposed to switch positions. Since the new definitions of modes of operation are directly tied to the mode switch position (with the only exceptions as provided in the footnotes to definition 1.0.M--see justification A), this change is only administrative in nature and does not change the intent of this specification and will not affect safety.

D.2 The change to note (8) for table 3.2.F is proposed to make use of the revised definitions so that it will be clear as to which conditions are applicable. The addition of the word "reactor" to "power operation" is only to use the explicitly defined phrase from section 1.0.H, and does not change the intended reactor state to which these words refer. The addition of the word "condition" to "startup" is only to use the explicit definition from section 1.0.I. The addition of "hot standby condition," along with "startup condition," will describe the same reactor states previously referred to by "startup" (i.e., startup mode, less than one percent rated thermal power). Since the reactor states to which this note is applicable are not changed, there will be no change in plant operation and no impact on nuclear safety.

D.3 The change to specification 3.3.B.1 is proposed to replace "refuel condition" with "shutdown condition." This is necessary since there is no definition for refuel condition in the technical specifications. The shutdown condition includes both the shutdown and refuel modes of operation. In this condition, there are interlocks in place which prevent withdrawal of more than one rod at a time from the fully inserted position, so there is no need to electrically disarm directional control valves to prevent rod withdrawal. Hence, the intent of this specification (which is to help prevent control rod drop accidents while at the same time allowing for control rod drive maintenance) is not affected by this proposed change, so there is no impact on nuclear safety.

Justification for Changes (Cont'd)

D.4 The change to specification 3.7.A.1.f is to identify the plant conditions under which the reactor must be scrammed if the suppression pool water temperature exceeds 110° F. The intent of this specification is to quickly reduce reactor power to remove the source of heat addition to the suppression pool when its temperature becomes too high to assure adequate pressure suppression capability. This intent is fulfilled by scramming the reactor to rapidly insert all control rods. The conditions to which this action would apply would be those conditions which allow control rods to be withdrawn such that the reactor is critical. These conditions are the startup condition, the Hht standby condition (if any control rod is not fully inserted), and reactor power operation. This action would not be applicable if the reactor was in a condition such that all control rods were fully inserted into the core, or if at most only one rod was withdrawn from its fully inserted position, since in these conditions actuating the RPS to scram the reactor would clearly not result in a reduction in core thermal power. Therefore, this proposed change would use the newly defined conditions from this technical specification amendment but would not change the intent of this LCO, so that there would be no adverse safety effects resulting from this change.

D.5 This change to specification 3.7.G.2 is proposed to clarify the intent of this LCO. This change is only administrative in nature, however, since the new definition of the run mode is tied directly to the run position of the reactor mode switch. The only exception is as described in footnote (1) to definition 1.0.M, which would allow the mode switch to be in run and the reactor to be in another mode, and this exception is addressed in justification A. Therefore, the intent of this specification is unchanged by this proposed amendment, and there is no effect on safety.

D.6 The change to specification 4.3.F.1.a is proposed to change from "prior to each startup" to "prior to startup" to describe when the SDV vent and drain valves must be tested. This change is only to make use of the explicitly defined phrase "prior to startup" and does not change the intent of this specification in any way. By the definition of "prior to startup," this testing must be performed prior to withdrawing rods for the purpose of going critical. Until such time as rods are withdrawn to go critical, the reactor is in the same physical state as if it were in the shutdown condition when the vent and drain valves are not required operable, so there is no need to test for their operability until rod withdrawal is to begin. Therefore, this change will not affect safety.

The changes to specifications 3.5.A.1.(1), 3.5.A.4, 3.5.B.1(1), 3.5.B.14, and 3.5.C.1 are proposed to change from "prior to reactor startup" to "prior to startup" to describe when the particular systems are required to be operable. In each case, the change is only to make use of the explicitly defined phrase "prior to startup" to avoid any interpretation problems. This change will not alter the intent or application of any of these LCOs, so nuclear safety will be unaffected.

Justification for Changes (Cont'd)

The change to specification 3.5.G.1(1) is proposed to change from the phrase "prior to a startup" to the phrase "prior to startup." This change will only make use of the new definition for "prior to startup," and does not change the intent of this LCO, so it will not affect safety. These changes are also discussed in justification C.6.

D.7 The change to section 3.3.F.2 is proposed to merely insert the word "power" in this specification to invoke the phrase "reactor power operation" since this phrase has an explicit definition within the technical specifications and "reactor operation" does not. This would allow operation in the startup/hot standby and run modes above one percent power with a single SDV vent or drain valve inoperable, provided that the redundant vent or drain valve was operable to perform the safety function. This change does not change the intent of this specification and will not affect nuclear safety.

The change to specification 3.5.C.3 is proposed to change the condition given in this LCO from "power operation" to "reactor power operation." This specification will require that two RHRSW pumps be available for standby coolant supply when the reactor is in the startup/hot standby or run mode above one-percent power. This change is only to make use of this explicitly defined phrase from the definitions. This change does not alter the intent or application of this specification, so it will not affect safety.

The proposed changed to specification 3.7.B.3 will merely change "reactor operation" to "reactor power operation" to make use of a condition which has an explicit definition within the technical specifications. This condition will allow continued operation in the startup or run modes above one percent rated thermal power with one Standby Gas Treatment System (SGTS) train inoperable for a period of seven days, provided that all active components of the other two SGTS trains are operable. The intent of this specification is to allow normal operation to continue temporarily with a redundant safety system inoperable, since the requirement to have the other two SGTS trains operable ensures that the safety function will be fulfilled if needed. This proposed change will not result in any change in the way the plant is operated, nor will it reduce any requirements, so this change will not affect safety.

The proposed change to specification 3.7.E.3 will merely change "reactor operation to "reactor power operation" to make use of a condition which has an explicit definition within the technical specifications. This change will allow continued operation in the startup or run modes above one percent rated thermal power with one Control Room Emergency Ventilation (CREV) system inoperable for a period of seven days. The intent of this specification is to allow normal operation to continue temporarily with a redundant safety system inoperable, since the other CREV system will be operable to perform the safety function if needed. This proposed change will not result in any change in the way the plant is operated, nor will it reduce any requirements, so it will not affect nuclear safety.

Justification for Changes (Cont'd)

The changes to specification 3.9.B.3 are proposed to implement the new definitions for "reactor power operation" and "cold shutdown condition." The intent of this specification is to allow normal operations to continue temporarily with one diesel generator inoperable. The proposed change will allow such operations in the startup or run modes at greater than one percent rated thermal power. These operating conditions are the same as those allowed by the current specification, so there will be no change in plant procedures or operations introduced by the use of the phrase "reactor power operation." This specification also requires that the reactor be shut down in the cold condition if all of the equipment operability requirements cannot be met. The intention here is to make the reactor subcritical and depressurized. This intent is unchanged by the use of the phrase "in the cold shutdown condition," so this change will not alter any plant procedures or operations. Since these changes will not affect the intention of this specification, they will not affect nuclear safety.

The changes to specification 3.9.B.4 are proposed to implement the new definitions for "reactor power operation" and "cold shutdown condition." The intent of this specification is to allow normal operations to continue temporarily with with one 4-kv shutdown board inoperable. The proposed changes will allow operation in the startup and run modes above one percent rated thermal power. These operating conditions are the same as those allowed by the current specification, so there will be no change in plant procedures or operations introduced by the use of "reactor power operation." This specification also requires that the reactor be shutdown in the cold condition if all of the equipment operability requirements cannot be met. The intent here is to make the reactor subcritical and depressurized. This intent is unchanged by the use of "cold shutdown condition." This change will not alter any plant procedures or operations. Since these changes will not affect the intention of this specification, they will not affect nuclear safety.

The change to specifications 3.9.B.4 thru 3.9.B.9 are all to implement the new definition of "Reactor Power Operation." Each of the LCOs addresses operation with inoperable equipment. The intention of these specifications is to allow normal operation to continue temporarily with a defined part of the auxiliary electrical system inoperable. Under this proposed change such operation will be permitted in the startup and run modes above one percent rated thermal power. These conditions are the same as those allowed by the current technical specifications, so these proposed changes will not result in any change in plant procedures or operation. Therefore, since these proposed changes will not alter the intention of the current specifications, they will not affect nuclear safety.

Justification for Changes (Cont'd)

D.8 The change to specification 3.3.D is proposed to make use of the explicitly defined terms by replacing "shutdown" with "placed in the Shutdown condition." By the definition of shutdown condition, the reactor will be placed in either the shutdown or refuel modes when a reactivity anomaly exists. Thus, the reactor will be made subcritical and will remain that way until the cause of the anomaly is determined and corrected. Since this will not change the intent of the current specification, there will be no adverse effect on nuclear safety.

The changes for specifications 3.5.A.3 and 3.5.B.8 are proposed to change from the phrase "shutdown and in the cold condition" to "placed in the cold shutdown condition" for these two action statements for the CSS and the RHR System. In each case these changes are only to allow use of an explicitly defined condition from the definitions and do not change the intent of these two LCOs, so nuclear safety is unaffected by these changes.

The change to specification 3.6.B.3.c is proposed to clarify that the plant is to be placed in the shutdown condition if pH limits on coolant chemistry cannot be maintained. This change will allow use of the explicitly defined phrase "shutdown condition" from the technical specification definitions to avoid possible confusion with the shutdown mode. In the shutdown condition the reactor will be subcritical at all times, so the intent of this specification is fulfilled by the new definition of the shutdown condition and nuclear safety is unaffected.

The change to specifications 3.6.C.3 and 3.6.E.1 will replace the words "shutdown in the cold condition" with "placed in the cold shutdown condition." This change will allow use of an explicitly defined condition within the technical specification and will not change the intent of these action statements, which is to make the reactor subcritical and depressurized. Hence, this change will not affect safety.

The change to specification 3.9.B.15 is proposed to implement the new definition of "cold shutdown condition." This specification currently requires that the reactor be shut down and in the cold condition if the LCOs for inoperable electrical equipment cannot be met. The intention here is that the reactor be made subcritical and the reactor vessel be depressurized. This intention is not changed by the use of the phrase "in the cold shutdown condition," since this will require being in the shutdown or refueling mode with reactor coolant temperature below 212°F. Since the intent of this specification is unchanged, nuclear safety is unaffected by this change.

D.9 The change to specification 3.6.B.4 will clarify that this LCO does not apply to the startup condition. This LCO gives relaxed coolant chemistry limits which apply to a depressurized vessel only. However, during startup conditions, where there exists an intent to go critical and increase power with the associated changes in temperature and pressure, the more restrictive limits of specification 3.6.B.1 would apply. Hence, this change will not alter the intent of this specification and so will not affect nuclear safety.

ENCLOSURE 3

BROWNS FERRY NUCLEAR PLANT (BFN)
DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION
UNITS 1, 2, AND 3

Description of Amendment Request

The proposed amendment would change the technical specification of BFN units 1, 2, and 3 by revising the BFN Technical Specification definition as follows:

A. Definitions 1.0.M, 1.0.M.1, 1.0.M.2, 1.0.M.3, and 1.0.M.4 are changed to:

1. Directly link the mode of operation to the position of the reactor mode switch.

2. Permit the position of the reactor mode switch to be temporarily changed for performance of a test or other operation while the unit does not change its mode of operation.

3. Make these definitions applicable only when there is fuel in the reactor. The unit would be considered not to be in any defined mode of operation or operational condition with no fuel in the reactor vessel.

4. Delete extraneous information which describes the selection functions of the reactor mode switch. Specify exceptions to the definitions of modes of operation and operational conditions relative to the reactor mode switch position.

B. Definition 1.0.S is changed to:

1. Specify the specific core components whose addition, removal, relocation, or movement within the reactor vessel constitutes a core alteration.

2. Specify that handling of these core components only constitutes core alteration when there is fuel in the reactor vessel.

3. Permit a core alteration to be completed as necessary to leave the unit in a safe, conservative condition when the suspension core alterations is required.

C. Definitions 1.0.H, 1.0.I, 1.0.J, 1.0.K, 1.0.L, and 1.0.X are changed to make these definitions consistent with the definitions of 1.0.M, 1.0.M.1, 1.0.M.2, 1.0.M.3, and 1.0.M.4 which link the mode of operation directly to the reactor mode switch position, and to improve the clarity and consistency of these definitions.

Description of Amendment Request (Cont'd)

D. A new definition is added which defines startup as "The withdrawing of control rods to make the reactor critical."

E. Administrative changes are made to the limiting conditions and surveillance requirements to invoke the terms defined in a concise manner.

Basis for Proposed No Significant Hazards Consideration Determination

NRC has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92(c). A proposed amendment to an operating license involves no significant hazards considerations if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, or (2) create the possibility of a new or different kind of accident from an accident previously evaluated, or (3) involve a significant reduction in a margin of safety.

This proposed change emphasizes the direct relationship between the reactor mode switch position and mode of operation and operational conditions and does nothing to diminish any previous requirement for an assumption of this relationship.

The footnotes which have been added to definitions 1.0.M.3 and 1.0.M.4 were adapted from GE-STS (BWR/4) definition table 1.2, technical specifications 3/4.1.4.1, 3/4.3.1.4.2, and 3/4.9.1.2. The functions of the reactor mode switch which are disabled by temporary movement to another position necessary for performance of required tests or maintenance authorized by the shift operations supervisor are compensated for by administrative controls. Where control rod movement restrictions are relaxed by movement of the reactor mode switch from the refuel or shutdown position to the startup/hot standby or run position, compensatory administrative controls are imposed, such as second party verification that all control rods remain fully inserted. Where refueling interlocks are made inoperable by movement of the reactor mode switch from the refuel position, compensatory administrative requirements such as prohibiting other core alterations are imposed. Similar administrative control compensations are made for disabling the one-rod-out interlock of the refuel position and the 15 percent of rated power scram of the refuel and startup/hot standby positions.

When there is no fuel in the reactor vessel, none of the accidents previously analyzed involving a fuel related accident in or above the reactor vessel can occur and no new accidents are created.

This change deletes extraneous information on the interlocks selected by mode switch position that play no part in the application of the definitions. The individual functions that the reactor mode switch positions select which are safety-related are required to be operable during the applicable operational conditions elsewhere in technical specifications.

Basis for Proposed No Significant Hazards Consideration Determination (Cont'd)

The core components specified (fuel, sources, incore instruments, and reactivity controls) are the only components whose addition, removal, relocation, or movement could contribute to an accident during core alterations.

Handling of the core components within the reactor vessel has no effect on core reactivity when there is no fuel in the reactor vessel.

Should a core alteration be in progress when it becomes necessary to suspend core alterations, it may be necessary to complete a movement in order to leave the unit in a safe and conservative condition.

1. The proposed changes do not result in a change in the plant configuration. Rather they attempt to apply a cohesive set of definitions and reference them throughout the body of the technical specifications. Since the proposed change does not affect the manner in which the plant was designed to operate, there is not an increase in the probability or consequences of an accident previously evaluated.

2. The proposed change does not affect normal or emergency operating procedures for the plant. These changes are mostly administrative in nature and will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed changes actually increase the overall safety of the plant by explicitly defining phrases in the technical specifications that were previously open to interpretation.

Determination of Basis for Proposed No Significant Hazards

Since the application for amendment involves a proposed change that is encompassed by the criteria for which no significant hazards consideration exists, TVA has made a proposed determination that the application involves no significant hazards consideration.