Table 3.2.J

Seismic Monitoring Instrumentation

	INSTRUMENT	MEASUREMENT RANGE	SETPOINT	MINIMUM OPERABLE
1.	TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
	a. U-1 reactor bldg. base slab (El. 519.0)	0-1.0g	.01g	1
	b. U-1 reactor bldg. floor slab (El.621.25)	0-1.0g	.01g	1
	c. Diesel-gen. bldg. base slab (El.565.5)	0-1.0g	.01g	1
2.	TRIAXIAL PEAK ACCELEROGRAPHS			
	a. U-1 RBCCW, 10" pipe (El.625.75)	0-5.0g	N/A	1
	b. U-1 RHRSW, 16" pipe (El.580.0)	0-5.0g	N/A	1
	c. U-1 core spray system, 14" pipe (El.544.0)	0-5.0g	N/A	1
3.	BIAXIAL SEISMIC SWITCHES			
	a. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*
	b. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*
	c. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*

*With control room indication

3.2/4.2-37

Table 4.2.J

SEISMIC MONITORING INSTRUMENT SURVEILLANCE REQUIREMENTS

Instrument	Channel Check	Channel Functional Test	Channel Calibration
1. TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
a. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
b. Unit 1 reactor bldg. floor slab (El. 621.25)	Monthly	SA	R
c. Diesel-generator bldg. base slab (El. 565.5)	Monthly	SA	R
2. TRIAXIAL PEAK ACCELEROGRAPHS			
a. U-1 RBCCW, 10" pipe (El. 625.75)	N/A	N/A	R
b. U-1 RHRSW, 16" pipe (El. 580.0)	N/A	N/A	R
c. U-1 core spray system, 14" pipe (El. 544.0)	N/A	N/A	R
3. BIAXIAL SEISMIC SWITCHES			
a. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
b. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
c. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R

The operability of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation dose to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

The operability of the seismic instrumentation ensures that sufficient capability is available to promptly determine the seismic response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for Browns Ferry Nuclear Plant and to determine whether the plant can continue to be operated safely. The instrumentation provided is consistent with specific portions of the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes."

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments will be calculated in accordance with guidance provided in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring the concentration of potentially explosive gas mixtures in the offgas holdup system. The operability and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with guidance provided in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20 Appendix B, Table II, Column (-ERROR-)OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

ATWS/RPT, Anticipated Transients without Scram/Recirculation Pump Trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an ATWS event. The response of the plant to this postulated event (ATWS/RPT) follows the BWR Owners Group Report by General Electric NEDE-31096-P-A and the accompanying NRC Staff Safety Evaluation Report.

ATWS/RPT utilizes the engineered safety feature (ESF) master/slave analog trip units (ATU) which consists of four level and four pressure channels total. The initiating logic consists of two independent trip systems each consisting of two reactor dome high pressure channels and two reactor vessel low level channels. A coincident trip of either two low levels or two high pressures in the same trip system causes initiation of ATWS/RPT. This signal from either trip system opens one of two EOC (end-of-cycle) breakers in series (the other system opens the other breaker) between the pump motor and the M-G set driving each recirculation pump. Both systems are completely redundant such that only one trip system is necessary to perform the ATWS/RPT function. Power comes from the 250 VDC shutdown boards.

Table 3.2.J

Seismic Monitoring Instrumentation

	INSTRUMENT	MEASUREMENT RANGE	SETPOINT	MINIMUM OPERABLE
1.	TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
	a. U-1 reactor bldg. base slab (El. 519.0)	0-1.0g	.01g	1
	b. U-1 reactor bldg. floor slab (El.621.25)	0-1.0g	.01g	1
	c. Diesel-gen. bldg. base slab (El.565.5)	0-1.0g	.01g	1
2.	TRIAXIAL PEAK ACCELEROGRAPHS			
	a. U-1 RBCCW, 10" pipe (El.625.75)	0-5.0g	N/A	1
	b. U-1 RHRSW, 16" pipe (El.580.0)	0-5.0g	N/A	1
	c. U-1 core spray system, 14" pipe (El.544.0)	0-5.0g	N/A	1
3.	BIAXIAL SEISMIC SWITCHES			
	a. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*
	b. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*
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*With control room indication

3.2/4.2-37

Table 4.2.J

SEISMIC MONITORING INSTRUMENT SURVEILLANCE REQUIREMENTS

Instrument	Channel Check	Channel Functional Test	Channel Calibration
1. TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
a. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
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c. Diesel-generator bldg. base slab (El. 565.5)	Monthly	SA	R
2. TRIAXIAL PEAK ACCELEROGRAPHS			
a. U-1 RBCCW, 10" pipe (El. 625.75)	N/A	N/A	R
b. U-1 RHRSW, 16" pipe (El. 580.0)	N/A	N/A	R
c. U-1 core spray system, 14" pipe (El. 544.0)	N/A	N/A	R
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a. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
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c. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R

The operability of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation dose to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

The operability of the seismic instrumentation ensures that sufficient capability is available to promptly determine the seismic response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for Browns Ferry Nuclear Plant and to determine whether the plant can continue to be operated safety. The instrumentation provided is consistent with specific portions of the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes."

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments will be calculated in accordance with guidance provided in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. This instrumentation also includes provisions for monitoring the concentration of potentially explosive gas mixtures in the offgas holdup system. The operability and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with guidance provided in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20 Appendix B, Table II, Column 2. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

ATWS/RPT, Anticipated Transients without Scram/Recirculation Pump Trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an ATWS event. The response of the plant to this postulated event (ATWS/RPT) follows the BWR Owners Group Report by General Electric NEDE-31096-P-A and the accompanying NRC Staff Safety Evaluation Report.

ATWS/RPT utilizes the engineered safety feature (ESF) master/slave analog trip units (ATU) which consists of four level and four pressure channels total. The initiating logic consists of two independent trip systems each consisting of two reactor dome high pressure channels and two reactor vessel low level channels. A coincident trip of either two low levels or two high pressures in the same trip system causes initiation of ATWS/RPT. This signal from either trip system opens one of two EOC (end-of-cycle) breakers in series (the other system opens the other breaker) between the pump motor and the M-G set driving each recirculation pump. Both systems are completely redundant such that only one trip system is necessary to perform the ATWS/RPT function. Power comes from the 250 VDC shutdown boards.

Table 3.2.J

Seismic Monitoring Instrumentation

	INSTRUMENT	MEASUREMENT RANGE	SETPOINT	MINIMUM OPERABLE
1.	TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
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	c. U-1 reactor bldg. base slab (El. 519.0)	.025-.25g	0.1g	1*

*With control room indication

3.2/4.2-36

Table 4.2.J

SEISMIC MONITORING INSTRUMENT SURVEILLANCE REQUIREMENTS

Instrument	Channel Check	Channel Functional Test	Channel Calibration
1. TRIAXIAL TIME HISTORY ACCELEROGRAPHS			
a. Unit 1 reactor bldg. base slab (El. 519.0)	Monthly	SA	R
b. Unit 1 reactor bldg. floor slab (El. 621.25)	Monthly	SA	R
c. Diesel-generator bldg. base slab (El. 565.5)	Monthly	SA	R
2. TRIAXIAL PEAK ACCELEROGRAPHS			
a. U-1 RBCCW, 10" pipe (El. 625.75)	N/A	N/A	R
b. U-1 RHRSW, 16" pipe (El. 580.0)	N/A	N/A	R
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The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with guidance provided in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20 Appendix B, Table II, Column 2. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

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ENCLOSURE 2

DESCRIPTION AND JUSTIFICATION
BROWNS FERRY NUCLEAR PLANT
UNITS 1, 2, AND 3

Description of Change

Browns Ferry Nuclear Plant Technical Specifications Tables 3.2.J and 4.2.J, Seismic Monitoring Instrumentation, are being revised to reflect the manufacturer's suggested testing for the upgraded triaxial peak accelerographs. This upgrade replaced the Terra Technolcgy (PRA-103S) seismic instruments with the EngDahl (PAR-400-2) seismic instruments. These new instruments were installed to improve instrument efficiency and dependability. In addition to the manufacturer's recommendations, several administrative changes are also being made to these tables and to Technical Specification, Section 3.2, Bases, page 3.2/4.2-70 for Units 1 and 2, and page 3.2/4.2-69 for Unit 3, paragraph 2.

Specifically, the channel calibration frequency for triaxial time history accelerographs and the triaxial peak accelerographs are changed from "N/A" to "R" (refueling). The channel functional test frequency for the triaxial peak accelerographs is changed from "12 months" to "N/A." The channel functional test frequency for the triaxial time history accelerographs and the biaxial seismic switches are administratively changed from "six months" to "SA" (semiannually). The channel calibration frequency for biaxial seismic switches is changed from once/operating cycle to "R." The note which says "except seismic switches" and is referenced by the channel check requirements for the triaxial time history accelerographs and the biaxial seismic switches is deleted. The other administrative changes are to provide a consistent order to the tables, number the table entries for each type of instrument, and correct the spelling of accelerograph. Also, in each table after each biaxial seismic switch, "(El. 519.0)," will be added.

In technical specification section 3.2, Bases, the words "magnitude of a" and "event and evaluate the" will be deleted, and after "... Browns Ferry Nuclear Plant" the words "and to determine whether the plant can continue to be operated safety" will be added.

Reason for Change

The subject tables are being changed to remove typographical errors, obtain a consistent explicit order for the instruments listed, and use the NRC standard verbage and definitions for surveillance frequencies in order to clarify the table requirements. The changes to the actual surveillance intervals are made to incorporate the manufacturers' recommendations for the new replacement seismic equipment which has been installed. The elevations for the biaxial seismic switches are being added for clarity and to improve consistency within the tables. The wording in the bases is being changed to agree with the wording in Regulatory Guide 1/12, "Instruments for Earthquakes," Revision 1, and to be more technically accurate.

Justification for Change

Table 3.2.J and 4.2.J contain lists of the seismic monitoring instrumentation and the operability and surveillance requirements for them. Revising these tables to correct spelling, provide a consistent order, number the items listed, and use the standard defined abbreviations for the surveillance frequencies will not degrade the intent of any current technical specification requirement and will provide consistency between the two tables.

The revision to the testing requirements listed for the triaxial time history accelerographs is to add a new requirement to perform a channel calibration at least once per refueling. This frequency is consistent with the General Electric Standard Technical Specifications, as well as Table 1, Frequency of Maintenance, of ANSI/ANS-2.2-1978, "Earthquake Instrumentation Criteria for Nuclear Power Plants." The revision to the testing requirements listed for the triaxial peak accelerographs is to delete the requirement to perform a channel functional test every 12 months and add a new requirement to perform a channel calibration at least once per refueling. Since the channel calibration is a more comprehensive operability verification than the channel functional test, the substitution will not degrade the intent of the technical specification. This frequency is consistent with the manufacturer's (EngDahl Enterprises) recommendations and the General Electric Standard Technical Specifications, as well as Table 1 of ANSE/ANS-2.2-1978. The addition of the once every refueling channel calibration will still provide adequate assurance that the instruments are capable of performing their intended functions. The 12 month-frequency was originally established to coincide with a plant refueling outage. Since the majority of the nuclear plants (including Browns Ferry) have or will go to an 18 month cycle, the intent of the technical specification surveillance has not change.

The change to the bases makes the technical specification consistent with the wording of Regulatory Guide 1.12 and does not change the intent of the technical specification.

ENCLOSURE 3

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

Description of Amendment Request

The proposed amendment would change the BFN Technical Specifications for units 1, 2, and 3 by upgrading tables 3.2.J and 4.2.J which contain the requirements for seismic instrumentation, and revising technical specification, section 3.2, bases. Specifically, several administrative changes have been made to remove typographic errors, consecutively number the entries in each table, delete a test exception that no longer applies, add instrument elevations, and change the testing frequencies listed to incorporate the frequency abbreviations defined in the BFN Technical Specification definitions section. This change will also add the requirement to perform a channel calibration once every refueling for triaxial time history accelerographs, triaxial peak accelerographs, and biaxial seismic switches. These changes are consistent with the manufacturer's recommendations and General Electric Standard Technical Specifications. Also, the wording in section 3.2, bases, will be changed to more accurately reflect the data that the installed instruments can provide and to agree with Regulatory Guide 1.12, "Instrumentation for Earthquakes," Revision 1.

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.

1. The proposed corrections do not result in a change in current plant configuration. Rather, they correct table entries in a technical specification for hardware that is installed in the plant. Since the proposed change does not affect or change 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 reflect new replacement seismic instrumentation installed to improve instrument efficiency and dependability. These changes to not change any operational conditions nor affect any equipment or setpoints that could cause or adversely affect the mitigation of an accident. Therefore, this proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

3. The proposed corrections actually increase the overall safety of the plant by establishing a stricter channel calibration schedule which is in accordance with the manufacturer's recommendations to ensure that this system is performing its intended function. The administrative changes being made make tables 3.2.J and 4.2.J consistent with the BFN Technical Specifications as well as more consistent with the General Electric Standard Technical Specifications. The seismic monitoring instrumentation is not required to mitigate the consequences of any design basis events, but rather provide data for evaluation after a seismic event. Therefore, the proposed technical specification revision does not involve a significant reduction in the margin of safety of technical specification 3.2.J/4.2.J, nor any other technical specification sections.

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.