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

August 17, 2001

TVA-BFN-TS-366

10 CFR 50.90

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

Gentlemen:

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

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 2 AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 366 - REMOVAL OF LOW SCRAM PILOT AIR HEADER PRESSURE SWITCHES (TAC NOS. MB2722 AND MB2723)

In accordance with the provisions of 10 CFR 50.90, TVA is submitting a request for a TS change (TS-366) to licenses DPR-52 and DPR-68 to delete Function 13, Low Scram Pilot Air Header Pressure, from TS Table 3.3.1.1-1, Reactor Protection System Instrumentation, and to lower the Allowable Value for Function 7.b, Scram Discharge Volume Water Level - High Float Switches, in the same Table. This TS change will allow TVA to permanently remove the Low Scram Pilot Air Header Pressure switches from service.

In response to IE Bulletin 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR," July 3, 1980, and its supplements, BFN implemented short-term and several long-term modifications to improve the performance of the Scram Discharge Volume System and the Scram Discharge Instrument Volume (SDIV). One of the short-term modifications installed the subject air header pressure switches, which scram the reactor on sensing low pressure in the control air system that serves the Control Rod Drive System. This modification was intended to be removed following the completion of the long-term modifications

D030

associated with the subject bulletin. However, as explained in the attached justification for the TS change, the Low Scram Pilot Air Header Pressure trip function has been maintained in service pending the remedy of a slow response time condition for the SDIV float switches.

During the next Units 2 and 3 refueling outages, the connecting piping between the SDIVs and the float switches will be replaced with larger pipe, and the elevation of the float switches will be lowered. These modifications will remedy the slow response time of the float switches, which eliminates the need to retain the Low Scram Pilot Air Header Pressure trip function operable. Therefore, TVA is requesting deletion of this TS Table 3.3.1.1-1 instrument function.

Enclosure 1 is a description and justification for the proposed TS change, and also includes the No Significant Hazards Consideration and Environmental Consideration. Enclosure 2 contains marked-up pages from the current TS and TS Bases showing the proposed TS revisions. Enclosure 3 provides retyped TS and TS Bases pages showing the revisions.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). The BFN Plant Operations Review Committee and the Nuclear Safety Review Board have reviewed these proposed changes, and determined that operation of BFN Units 2 and 3 in accordance with the proposed changes will not endanger the health and safety of the public. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Alabama State Department of Public Health.

TVA is requesting approval of this change prior to the next Unit 3 refueling outage in Spring 2002 and that it be made effective prior to completion of the next Units 2 and 3

refueling outages. This schedule will allow the referenced plant modifications to be completed during the outages, and will allow for the orderly completion of required procedure revisions and training activities for the TS change.

There are no regulatory commitments associated with this submittal. If you have any questions concerning this proposed TS change, please contact me at (256)729-2636.

Sincerely,

T. E. Abney
Manager of Licensing
and Industry Affairs

Subscribed and sworn to before me
on this 17th day of August 2001.

Notary Public

My Commission Expires 09/22/2002

Enclosures
cc: See page 4

Enclosures
cc (Enclosures):
State Health Officer
Alabama State Department of Public Health
RSA Tower - Administration
Suite 1552
P.O. Box 303017
Montgomery, Alabama 36130-3017

(Via NRC Electronic Distribution):
Mr. Paul Fredrickson, Branch Chief
U.S. Nuclear Regulatory Commission
Sam Nunn Atlanta Federal Building
Region II
61 Forsyth Street, S.W., Suite 23T85
Atlanta, Georgia 30303-8931

Mr. Kahtan N. Jabbour, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611

Enclosure 1

TS-366
Removal of Low Scram Pilot Air Header Pressure Switches

Description and Justification

I. Description of Change

By this letter, the Tennessee Valley Authority (TVA) is submitting a request for amendments to licenses DPR-52 and DPR-68 for Browns Ferry Nuclear Plant (BFN) Units 2 and 3, respectively. The proposed amendments would delete Function 13, Low Scram Pilot Air Header Pressure, from Table 3.3.1.1-1, Reactor Protection System (RPS) Instrumentation. Additionally, in the same Technical Specifications (TS) Table, the Allowable Value for Function 7.b, Scram Discharge Volume Water Level - High, Float Switch, is being lowered from 50 gallons to 46 gallons. The associated TS Bases for these two instrument functions are likewise being revised.

Enclosure 2 includes marked-up Unit 2 and Unit 3 TS and Bases pages from the current TS, which show the specific changes. Retyped TS and TS Bases pages are provided in Enclosure 3. The proposed TS changes are identical for the two BFN units.

II. Reason for the Proposed Change

In response to IE Bulletin 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR," July 3, 1980 (Reference 1) and its supplements, BFN implemented short-term and several long-term modifications to improve the performance of the Scram Discharge Volume (SDV) System. One of the short-term modifications installed scram pilot air header pressure switches, which would scram the reactor upon sensing low pressure in the control air system that serves the Control Rod Drive (CRD) System. This modification was intended to be removed following the completion of the long-term upgrades associated with the subject bulletin to improve the hydraulic coupling of the SDV System.

The IE Bulletin 80-17 long-term modifications included the installation of separate Scram Discharge Instrument Volumes (SDIVs) for each of the two control rod banks and the addition of diverse instruments in the SDIVs for the

SDIV high water level trip function. Regarding the instrument diversity modifications, redundant pairs of resistance-temperature detectors (RTDs) and float switches were installed in each of the SDIVs. Field performance of the RTDs was satisfactory, however, a review of system data following reactor scrams showed that the actuation of the float switches typically lagged the RTDs by approximately 20 seconds. Pending remedy of the float switch slow response time, TVA has maintained the scram pilot air pressure switches in service.

A system analysis determined that the slow response time of the float switches was due to an undersized piping connection between the SDIVs and the float switch assemblies, which limits the fill rate of the float switch assemblies and unduly delays switch actuation. To remedy the float switch response time, plant design changes to increase the piping size between the SDIVs and float switch assemblies, and to lower the float switch assemblies are scheduled to be performed during the next Units 2 and 3 refueling outages. Following completion of these modifications, the Low Scram Pilot Air Header Pressure scram function is no longer needed and can be deleted from TS. Deletion of the TS will allow TVA to physically remove this trip function from service.

Removal of the Low Scram Pilot Air Header Pressure trip function is beneficial in eliminating risks associated with spurious reactor scrams caused by pressure switch malfunctions or by inadvertent actuation of the switches during maintenance or testing activities. BFN Unit 2 has experienced one unnecessary scram from power on low scram air header pressure. This was due to a maintenance error while working on a pressure regulator in the scram air header system as reported in Licensee Event Report (LER) 50-260/94004, May 13, 1994 (Reference 2). Unit 2 has also experienced a scram from the pressure switches while conducting maintenance activities during shutdown operations as reported in LER 50-260/95004, April 28, 1995 (Reference 3). Hence, plant operating history would characterize the scram pilot air pressure trip system as being prone to unplanned actuations on a infrequent basis. It follows that the removal of this trip function would eliminate the system as a potential initiator of reactor transients.

Additionally, the TS change would reduce manpower resources associated with maintenance and testing of the scram pilot air header switches, and eliminate radiation exposure to employees involved in the testing and

calibration of the pressure switches. This is an added benefit.

III. Justification for Change

Regulatory Background

IE Bulletin 80-17 (Reference 1) and its five supplements (References 4, 5, 6, 7, and 8), and IE Information Notice No. 80-30, "Potential for Unacceptable Interaction between the Control Rod Drive Scram Function and Non-Essential Control Air at Certain GE BWR Facilities," August 19, 1980 (Reference 9) describe system deficiencies associated with the SDV System at Boiling Water Reactors (BWRs). NRC requested that BWR owners respond to IE Bulletin 80-17 in a letter dated October 1, 1980, to all BWR Licensees (Reference 10) and subsequently issued a generic Safety Evaluation Report (SER) on the BWR Scram Discharge System on December 9, 1980 (Reference 11), which included technical bases and design criteria for improving the hydraulic coupling and overall performance of SDVs. This SER also required the installation of an automatic scram on CRD low air pressure for BWR plants, including BFN, that had small piping connections (2-inch) between the SDV and SDIV. A complete description of the BFN short-term and long-term IE Bulletin 80-17 commitments is provided in letters to NRC dated December 15, 1980, February 3, 1981, May 5, 1981, October 6, 1982, and June 27, 1984 (References 12, 13, 14, 15, and 16).

At BFN, the IE Bulletin 80-17 modifications included adding separate SDIVs for each of the two rod banks, increasing the piping connection size between the SDVs and SDIVs to 6 inches, making improvements to the SDV vent and drains, and the addition of redundant and diverse high water level trip sensors in the SDIVs. Regarding the SDIV instrumentation modifications, redundant pairs of RTDs and Magnetrol brand float switches were installed in each SDIV to provide a diverse trip capability for a high water condition in the SDIVs. These instrument trips are currently listed in TS Table 3.3.1.1-1 as Functions 7.a (RTDs) and 7.b (float switches), respectively. The RTDs performed satisfactory in the field, however, a review of system data following scrams showed that the actuation of the Magnetrol float switches typically lagged the RTDs by approximately 20 seconds. This condition was the subject of IE Information Notice No. 87-17, "Response Time of Scram Instrument Volume Level Detectors," April 7, 1987 (Reference 17).

IE Bulletin 80-17 was closed for BFN and other BWRs in NUREG/CR-5191, "Close-out of IE Bulletin 80-17: Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR," December 1988 (Reference 18). As referenced in NUREG/CR-5191, the BFN closure documentation is provided in NRC Inspection Report 81-12, May 26, 1981 (Reference 19), and NRC Inspection Report 87-13, April 9, 1987 (Reference 20). In the BFN close-out, the IE Bulletin 80-17 plant modifications implemented to improve SDV hydraulic coupling were found to be satisfactory except for the long delay time on the Magnetrol float switches.

The subject air pressure switches were added to TS in License Amendment 125 for Unit 2, August 19, 1986 (Reference 21) and Amendment 197 for Unit 3, August 29, 1995 (Reference 22). These pressure switches are currently included in TS as Function 13, Low Scram Pilot Air Header Pressure in the RPS Instrumentation Table, TS Table 3.3.1.1-1.

Technical Evaluation

Updated Final Safety Analysis Report Section 3.4 describes the design and operation of the SDV System. The scram discharge system receives the water displaced by the motion of the control rod drives during a reactor scram. The system contains two separate SDVs serving the East and West rod banks, each of which drains to its own adjacent instrumented drain tank (namely, the SDIVs). The primary design objective of the SDV System is to ensure that sufficient free volume is maintained available to receive water displaced by the control rods during a full scram, which in turn maintains scram capability. Should the SDV fill to a point where there is insufficient free volume to accept the displaced water, control rod insertion would be impeded.

SDIV water level is measured by two diverse methods. Level in each SDIV is measured by two thermal probes (RTD devices) and two Magnetrol float switches for a total of eight level switches. The outputs of these devices are arranged so that there is a signal from a float switch and a thermal probe provided to each RPS logic channel. The trip logic is one-out-of-two taken twice for a scram, so actuation of either the float switches or the RTD switches will initiate a high water level scram, and a trip in either SDIV will initiate a reactor scram. For BFN, the high water level trip TS Allowable Value is 50 gallons measured in the SDIVs, as shown for Function 7 in TS Table 3.3.1.1-1, RPS Instrumentation.

During plant operation, the SDIV/SDV vents and drains are open, so the SDVs and SDIVs will be empty and the entire SDV is available for accepting a reactor scram. To provide protection against malfunctions that could result in inleakage or accumulation of water in the SDV System, such as a blocked SDIV drain line, water level is continuously monitored in the SDIVs and a reactor scram is initiated on SDIV high water level while the remaining free SDV volume is still sufficient to accommodate the water from a reactor scram. SDV inleakage can also be caused by low pressure in the control air system that serves the CRD System. Low control air pressure in the scram pilot air header could result in the partial opening of the pneumatic scram outlet valves, which would allow leakage past the scram outlet valves into the SDV. Section 4.2.4 of the December 9, 1980, SER (Reference 11) for IE Bulletin 80-17 provides the technical basis and design criteria for acceptable system design for SDV inleakage events.

The SDIV high water level trip protects against water inleakage into the SDVs if there is good hydraulic coupling between the SDV and SDIVs. At the time of the original issue of IE Bulletin 80-17, the SDVs for the East and West rod banks drained into a single SDIV, and the drain lines between the SDVs for the two rod banks and the single SDIV were 2-inch pipes. This configuration did not provide adequate hydraulic coupling. Therefore, pending improvement of SDV/SDIV hydraulic coupling, NRC (Reference 11) required BFN to install an automatic scram on low air pressure in the CRD System. The BFN long-term Bulletin 80-17 modifications included providing a separate SDIV for each rod bank with a 6-inch line connecting the SDVs and SDIVs. With these SDV/SDIV hydraulic coupling improvement modifications implemented, the water accumulation and inleakage events, including low air pressure events described in the December 9, 1980, NRC SER for SDV Systems (Reference 11), are successfully mitigated by the SDIV high water level scram alone. Hence, the low air pressure scram would no longer be needed except for the SDIV float switch problem as explained below.

The SER design criteria also required single failure criteria be applied in evaluating the SDV design. If an RTD switch failure is postulated, the timing of the high level SDIV scram for inleakage events would be governed by the response of the float switches since actuation of the float switches would be required to fully complete the RPS trip logic. With the observed long delay time of the

float switches, this would result in a scram being generated at an SDIV level in excess of the 50 gallon TS Allowable Value for the SDIV high water level trip function. This system response does not meet the design criteria objectives of Section 4.2.4 of the SER (Reference 11) regarding inleakage events when considering worst case single failures in that the SDIV high level trip would be unduly delayed. With this situation, TVA did not consider the SDIV high water level trip design objectives met for inleakage events, and pending remedy of the slow response time of the Magnetrol float switches, TVA has maintained the low air pressure switches in service. With the low air pressure trip enabled, a reactor trip is automatically generated prior to CRD System air pressure reaching a point low enough to allow the scram discharge valves to partially open and allow inleakage into the SDV.

A system analysis determined that the slow response time of the float switches was due to an undersized piping connection between the SDIVs and the float switch assemblies, which limits the fill rate of the float switch assemblies and unduly delays switch actuation. To remedy this response time, a plant design change has been prepared which will increase the piping size between the SDIV and float switch assemblies from the existing 3/4-inch diameter, Schedule 160 piping, to 2-inch diameter, Schedule 80 piping. This piping change increases the cross-sectional flow area between the SDIVs and the switch assemblies by a factor of 10, which will increase the fill rate of the float switches proportionally. To further offset the float switch response time, the float switch assemblies will be physically lowered by approximately 10 inches, which translates to a decrease of the TS Allowable Value of 50 gallons to 46 gallons. With these design changes, the float switch delay time will be remedied, and the SDIV high water level trip will alone accommodate the low air pressure inleakage events described in the SER (Reference 11) for SDV Systems. Therefore, after the subject modifications are completed, the Low Scram Pilot Air Header Pressure trip function is no longer needed and deletion of the associated TS is justified.

The removal of the trip function from the TS will allow TVA to remove the air pressure trip from service. As previously discussed, this change is beneficial in eliminating risks associated with spurious reactor scrams caused by pressure switch malfunctions or by inadvertent actuation of the switches during maintenance or testing activities.

IV. No Significant Hazards Consideration

TVA is submitting a request for amendments to the Browns Ferry Nuclear Plant (BFN) Units 2 and 3 Technical Specifications (TS). The proposed amendments would amend the Units 2 and 3 TS to delete Function 13, Low Scram Pilot Air Header Pressure, from Table 3.3.1.1-1, Reactor Protection System Instrumentation, and lower the Allowable Value for the Scram Discharge Volume Water Level - High, Float Switch Function in the same TS Table.

TVA has concluded that operation of BFN Units 2 and 3 in accordance with the proposed change to the TS does not involve a significant hazards consideration. TVA's conclusion is based on its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

A. **The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

Modifications to the Scram Discharge Instrument Volume (SDIV) System are being implemented to ensure that the SDIV high water level instrumentation will respond adequately to provide redundant, diverse trip functions for a Scram Discharge Volume (SDV) inleakage event. Since the scram function will be successfully performed, the removal of the low scram pilot air header pressure trip function does not involve a significant increase in the probability or consequences of any accident previously evaluated.

B. **The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The design criteria for the Scram Discharge System is contained in the Safety Evaluation Report on the BWR Scram Discharge System, which was transmitted by NRC letter dated December 9, 1980, to All BWR Licensees. Modifications to the SDV System have been evaluated to demonstrate that the high water level instrumentation in the SDIV will respond adequately to provide the required trip function. No new system failure modes are created as a result of removing the low scram pilot air header trip, since the redundant and diverse SDIV high water level instruments will initiate a successful reactor scram. Therefore, removal of the low scram pilot air

header trip function does not create the possibility of a new or different kind of accident from any accident previously evaluated.

C. **The proposed amendment does not involve a significant reduction in a margin of safety.**

The water level in the SDIV is monitored by both resistance-temperature type detectors and float switches. Redundancy and diversity in the instrumentation that initiates the scram signal is maintained even with the removal of the low scram pilot air header pressure trip function. Modifications to the SDIV System have been evaluated to demonstrate that the high water level instrumentation will respond adequately to provide the required trip function for an inleakage event. Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.

V. Environmental Consideration

The requested amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. TVA has determined that the requested amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment of the proposed amendment is required.

VI. References

1. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert During A Scram at a BWR," July 3, 1980

2. LER 50-260/94004, BFN Unit 2 Scram from Full Power During Planned Maintenance Activity Due to Inappropriate Personnel Action, May 13, 1994

3. LER 50-260/95004, BFN Unit 2 Reactor Scram Resulting From Personnel Error During Surveillance Testing Causing the Actuation of the ESF System, April 28, 1995

4. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert at a BWR, Supplement 1," July 18, 1980

5. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert at a BWR, Supplement 2," July 22, 1980

6. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert at a BWR, Supplement 3," August 22, 1980

7. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert at a BWR, Supplement 4," December 18, 1980

8. IE Bulletin No. 80-17, "Failure of 76 of 185 Control Rods to Fully Insert at a BWR, Supplement 5," February 13, 1981

9. IE Information Notice No. 80-30, "Potential for Unacceptable Interaction between the Control Rod Drive Scram Function and Non-essential Control Air at Certain GE BWR Facilities," August 19, 1980

10. NRC Letter to all BWR Licensees dated October 1, 1980, BWR Scram System

11. NRC Letter to all BWR Licensees dated December 9, 1980, NRC Generic Safety Evaluation on Scram Discharge System

12. TVA Letter to NRC dated December 15, 1980, discussing planned SDV modifications

13. TVA Letter to NRC dated Feb 3, 1981, providing schedule for SDV modifications

14. TVA Letter to NRC dated May 5, 1981, providing modification details and schedule information

15. TVA Letter to NRC dated October 6, 1982, providing details concerning long-term SDV modifications

16. TVA Letter to NRC dated June 27, 1984, revision of SDV commitments

17. IE Information Notice No. 87-17, "Response Time of Scram Instrument Volume Level Detectors," April 7, 1987

18. NUREG/CR-5191, "Close-out of IE Bulletin 80-17: Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR," December 1988

19. NRC Inspection Report 81-12, May 26, 1981

20. NRC Inspection Report 87-13, April 9, 1987

21. NRC TS SER dated August 19, 1986, Amendment 125 to the BFN Unit 2 License

22. NRC TS SER dated August 29, 1995, Air Header Switches for Unit 3 - Amendment 197 to the BFN Unit 3 License

Enclosure 2

TS-366
Removal of Low Scram Pilot Air Header Pressure Switches

Marked-up TS Pages

I. Affected Page List

Unit 2	Unit 3
3.3-9	3.3-9
B 3.3-2	B 3.3-2
B 3.3-28	B 3.3-28
B 3.3-29	B 3.3-29
B 3.3-41	B 3.3-41

II. Marked-up revised TS/TS Base Pages are attached. The same changes apply to Units 2 and 3.

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level - High (continued)				46	
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ ~~50~~ gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ ~~50~~ gallons 46
8. Turbine Stop Valve - Closure	≥ 30% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 30% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA
13. ~~Low Scram Pilot Air Header Pressure~~	~~1,2~~	~~2~~	~~G~~	~~SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.16~~	~~≥ 50 psig~~
	~~5(a)~~	~~2~~	~~H~~	~~SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.16~~	~~≥ 50 psig~~

Deleted

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

BASES

BACKGROUND (continued)

fast closure trip oil pressure (indicated by TCV low hydraulic pressure), turbine stop valve (TSV) position, drywell pressure, ~~scram pilot air header pressure,~~ and scram discharge volume SDV) water level, as well as reactor mode switch in shutdown position, manual, and RPS channel test switch scram signals. There are at least four redundant sensor input signals from each of these parameters (with the exception of the reactor mode switch in shutdown, manual, and RPS channel test switch scram signals). Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay deenergizes, which then outputs an RPS trip signal to the trip logic.

The RPS is comprised of two independent trip systems (A and B) with two logic channels in each trip system (logic channels A1 and A2, B1 and B2) as shown in Reference 1. The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so that either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as a one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds after the full scram signal is received. This 10 second delay on reset ensures that the scram function will be completed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

12. RPS Channel Test Switches (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated solely on the position of the switches.

Four channels of the RPS Channel Test Switch Function with two channels in each trip system arranged in a one-out-of-two logic are available and required to be OPERABLE. The function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

~~13. Low Scram Pilot Air Header Pressure (PS-85-35A1, PS-85-35A2, PS-85-35B1, and PS-85-35B2)~~

~~The Low Scram Pilot Air Header Pressure trip performs the same function as the high water level in the scram discharge instrument volume for fast fill events in which the high level instrument response time may not be adequate. A fast fill event is postulated for certain degraded control air events in which the scram outlet valves unseat enough to allow 5 gpm per drive leakage into the scram discharge volume but not enough to cause rod insertion.~~

~~The Allowable Value is chosen low enough to ensure that there is sufficient volume in the SDV to accommodate the water from a full scram.~~

(continued)

BASES

~~APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY~~

~~13. Low Scram Pilot Air Header Pressure (PS-85-35A1, PS-85-35A2, PS-85-35B1, and PS-85-35B2) (continued)~~

~~Four channels of Low Scram Pilot Air Header Pressure Function, with two channels in each trip system arranged in a one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. The Function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn. At all other times, this Function may be bypassed.~~

ACTIONS

A Note has been provided to modify the ACTIONS related to RPS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RPS instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable RPS instrumentation channel.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions supplements the automatic self-test functions that operate continuously in the APRM and voter channels. The APRM CHANNEL FUNCTIONAL TEST covers the APRM channels (including recirculation flow processing - applicable to Function 2.b only), the 2-out-of-4 voter channels, and the interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

~~The 184 day Frequency of SR 3.3.1.1.16 for the scram pilot air header low pressure trip function is based on the functional reliability previously demonstrated by this function, the need for minimizing the radiation exposure associated with the functional testing of this function, and the increased risk to plant availability while the plant is in a half-scram condition during the performance of the functional testing versus the limited increase in reliability that would be obtained by the more frequent functional testing.~~

(continued)

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level - High				46	
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ ~~50~~ gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ ~~50~~ gallons 46
8. Turbine Stop Valve - Closure	≥ 30% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 30% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA
13. ~~Low Scram Pilot Air Header Pressure~~	~~1,2~~	~~2~~	~~G~~	~~SR 3.3.1.1.13~~ ~~SR 3.3.1.1.14~~ ~~SR 3.3.1.1.16~~	~~≥ 50 psig~~
	~~5(a)~~	~~2~~	~~H~~	~~SR 3.3.1.1.13~~ ~~SR 3.3.1.1.14~~ ~~SR 3.3.1.1.16~~	~~≥ 50 psig~~

Deleted

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

BASES

BACKGROUND (continued)

fast closure trip oil pressure (indicated by TCV low hydraulic pressure), turbine stop valve (TSV) position, drywell pressure, ~~scram pilot air header pressure,~~ and scram discharge volume (SDV) water level, as well as reactor mode switch in shutdown position, manual, and RPS channel test switch scram signals. There are at least four redundant sensor input signals from each of these parameters (with the exception of the reactor mode switch in shutdown, manual, and RPS channel test switch scram signals). Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay deenergizes, which then outputs an RPS trip signal to the trip logic.

The RPS is comprised of two independent trip systems (A and B) with two logic channels in each trip system (logic channels A1 and A2, B1 and B2) as shown in Reference 1. The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so that either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as a one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds after the full scram signal is received. This 10 second delay on reset ensures that the scram function will be completed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

12. RPS Channel Test Switches (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated solely on the position of the switches.

Four channels of the RPS Channel Test Switch Function with two channels in each trip system arranged in a one-out-of-two logic are available and required to be OPERABLE. The function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

~~13. Low Scram Pilot Air Header Pressure (PS-85-35A1, PS-85-35A2, PS-85-35B1, and PS-85-35B2)~~

~~The Low Scram Pilot Air Header Pressure trip performs the same function as the high water level in the scram discharge instrument volume for fast fill events in which the high level instrument response time may not be adequate. A fast fill event is postulated for certain degraded control air events in which the scram outlet valves unseat enough to allow 5 gpm per drive leakage into the scram discharge volume but not enough to cause rod insertion.~~

~~The Allowable Value is chosen low enough to ensure that there is sufficient volume in the SDV to accommodate the water from a full scram.~~

(continued)

BASES

~~APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY~~

~~13. Low Scram Pilot Air Header Pressure (PS-85-35A1, PS-85-35A2, PS-85-35B1, and PS-85-35B2) (continued)~~

~~Four channels of Low Scram Pilot Air Header Pressure Function, with two channels in each trip system arranged in a one-out-of-two logic, are required to be OPERABLE to ensure that no single instrument failure will preclude a scram from this Function on a valid signal. The Function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn. At all other times, this Function may be bypassed.~~

ACTIONS

A Note has been provided to modify the ACTIONS related to RPS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RPS instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable RPS instrumentation channel.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions supplements the automatic self-test functions that operate continuously in the APRM and voter channels. The APRM CHANNEL FUNCTIONAL TEST covers the APRM channels (including recirculation flow processing - applicable to Function 2.b only), the 2-out-of-4 voter channels, and the interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

~~The 184 day Frequency of SR 3.3.1.1.16 for the scram pilot air header low pressure trip function is based on the functional reliability previously demonstrated by this function, the need for minimizing the radiation exposure associated with the functional testing of this function, and the increased risk to plant availability while the plant is in a half-scram condition during the performance of the functional testing versus the limited increase in reliability that would be obtained by the more frequent functional testing.~~

(continued)

Enclosure 3

TS-366
Removal of Low Scram Pilot Air Header Pressure Switches

Retyped TS Pages

I. Affected Page List

Unit 2	Unit 3
3.3-9	3.3-9
B 3.3-2	B 3.3-2
B 3.3-28	B 3.3-28
B 3.3-29	B 3.3-29
B 3.3-41	B 3.3-41

II. BFN Units 2 and 3 retyped TS/TS Base Pages are attached.

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level - High (continued)					
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
8. Turbine Stop Valve - Closure	≥ 30% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 30% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA
13. Deleted					

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

BASES

BACKGROUND (continued)

fast closure trip oil pressure (indicated by TCV low hydraulic pressure), turbine stop valve (TSV) position, drywell pressure, and scram discharge volume (SDV) water level, as well as reactor mode switch in shutdown position, manual, and RPS channel test switch scram signals. There are at least four redundant sensor input signals from each of these parameters (with the exception of the reactor mode switch in shutdown, manual, and RPS channel test switch scram signals). Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay deenergizes, which then outputs an RPS trip signal to the trip logic.

The RPS is comprised of two independent trip systems (A and B) with two logic channels in each trip system (logic channels A1 and A2, B1 and B2) as shown in Reference 1. The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so that either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as a one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds after the full scram signal is received. This 10 second delay on reset ensures that the scram function will be completed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

12. RPS Channel Test Switches (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated solely on the position of the switches.

Four channels of the RPS Channel Test Switch Function with two channels in each trip system arranged in a one-out-of-two logic are available and required to be OPERABLE. The function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to RPS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RPS instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable RPS instrumentation channel.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions supplements the automatic self-test functions that operate continuously in the APRM and voter channels. The APRM CHANNEL FUNCTIONAL TEST covers the APRM channels (including recirculation flow processing - applicable to Function 2.b only), the 2-out-of-4 voter channels, and the interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

(continued)

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level - High					
b. Float Switch	1,2	2	G	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
	5(a)	2	H	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14	≤ 46 gallons
8. Turbine Stop Valve - Closure	≥ 30% RTP	4	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≤ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 30% RTP	2	E	SR 3.3.1.1.8 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.15	≥ 550 psig
10. Reactor Mode Switch - Shutdown Position	1,2	1	G	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.12 SR 3.3.1.1.14	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.14	NA
12. RPS Channel Test Switches	1,2	2	G	SR 3.3.1.1.4	NA
	5(a)	2	H	SR 3.3.1.1.4	NA
13. Deleted					

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

BASES

BACKGROUND (continued)

fast closure trip oil pressure (indicated by TCV low hydraulic pressure), turbine stop valve (TSV) position, drywell pressure, and scram discharge volume (SDV) water level, as well as reactor mode switch in shutdown position, manual, and RPS channel test switch scram signals. There are at least four redundant sensor input signals from each of these parameters (with the exception of the reactor mode switch in shutdown, manual, and RPS channel test switch scram signals). Most channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay deenergizes, which then outputs an RPS trip signal to the trip logic.

The RPS is comprised of two independent trip systems (A and B) with two logic channels in each trip system (logic channels A1 and A2, B1 and B2) as shown in Reference 1. The outputs of the logic channels in a trip system are combined in a one-out-of-two logic so that either channel can trip the associated trip system. The tripping of both trip systems will produce a reactor scram. This logic arrangement is referred to as a one-out-of-two taken twice logic. Each trip system can be reset by use of a reset switch. If a full scram occurs (both trip systems trip), a relay prevents reset of the trip systems for 10 seconds after the full scram signal is received. This 10 second delay on reset ensures that the scram function will be completed.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

12. RPS Channel Test Switches (continued)

There is no Allowable Value for this Function since the channels are mechanically actuated solely on the position of the switches.

Four channels of the RPS Channel Test Switch Function with two channels in each trip system arranged in a one-out-of-two logic are available and required to be OPERABLE. The function is required in MODES 1 and 2, and in MODE 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the MODES and other specified conditions when control rods are withdrawn.

(continued)

BASES (continued)

ACTIONS

A Note has been provided to modify the ACTIONS related to RPS instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable RPS instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable RPS instrumentation channel.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8, SR 3.3.1.1.12 and SR 3.3.1.1.16 (continued)

The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions supplements the automatic self-test functions that operate continuously in the APRM and voter channels. The APRM CHANNEL FUNCTIONAL TEST covers the APRM channels (including recirculation flow processing - applicable to Function 2.b only), the 2-out-of-4 voter channels, and the interface connections into the RPS trip systems from the voter channels. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 184 day Frequency of SR 3.3.1.1.16 for the APRM Functions is based on the reliability analysis of Reference 12. (NOTE: The actual voting logic of the 2-out-of-4 Voter Function is tested as part of SR 3.3.1.1.14.) A Note for SR 3.3.1.1.16 is provided that requires the APRM Function 2.a SR to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM Function cannot be performed in MODE 1 without utilizing jumpers or lifted leads. This Note allows entry into MODE 2 from MODE 1 if the associated frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

(continued)