Nuclear Operating Company

South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 4, 2003
NOC-AE-03001584
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Proposed Change to Technical Specification 3/4.3.3.5 for Remote Shutdown System

STP Nuclear Operating Company (STPNOC) submits the attached proposed amendment to South Texas Project Operating Licenses, NPF-76 and NPF-80. This license amendment request proposes revising Technical Specification 3/4.3.3.5 for the Remote Shutdown System to be consistent with the requirements of NUREG-1431.

STPNOC requests approval of the proposed amendment by March 30, 2004. STPNOC requests 60 days for implementation of the amendment after it is approved.

The STPNOC Plant Operations Review Committee has reviewed and concurred with the proposed change to the Technical Specifications.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

A001

If there are any questions regarding the proposed amendment, please contact Mr. A. W. Harrison at (361) 972-7298 or me at (361) 972-7902.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 4, 2003.
date

T. J. Jordan
Vice President
Engineering & Technical Services

awh/
Attachments:
1. Description of Changes and Safety Evaluation
2. Annotated Technical Specification Pages
3. Bases Inserts

cc:
(paper copy)

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Richard A. Ratliff
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3189

Jeffrey Cruz
U. S. Nuclear Regulatory Commission
P. O. Box 289, Mail Code: MN116
Wadsworth, TX 77483

C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

(electronic copy)

A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP

L. D. Blaylock
City Public Service

David H. Jaffe
U. S. Nuclear Regulatory Commission

R. L. Balcom
Texas Genco, LP

A. Ramirez
City of Austin

C. A. Johnson
AEP Texas Central Company

Jon C. Wood
Matthews & Branscomb

# ATTACHMENT 1

# DESCRIPTION OF CHANGES

# AND

# SAFETY EVALUATION

## 1.0 Introduction

STPNOC proposes to revise the STP Technical Specifications for the Remote Shutdown System to reflect requirements consistent with those in NUREG-1431. The proposed changes will increase the allowed outage time for inoperable Remote Shutdown System components to a time that is more consistent with their safety significance. It will also relocate the description of the required components to the Bases where it will be directly controlled by STPNOC.

## 2.0 Description

Attachment 2 is the Technical Specification (TS) markup for the proposed changes. The changes include the following:

1. Revise TS 3.3.3.5 Limiting Condition for Operation (LCO) to state that the Remote Shutdown System functions shall be OPERABLE. Delete references to transfer switches, power or controls and monitoring instrumentation as shown in the associated Table 3.3-9. This is consistent with content of NUREG-1431.
2. Revise TS 3.3.3.5 ACTION a. to delete the references to transfer switches, power or controls, and monitoring instrumentation as shown in the associated Table 3.3-9. The ACTION will be simplified to state the entry condition for the action as "one or more of the number of required remote shutdown monitoring functions inoperable". A note is added to permit separate condition entry for each function. The proposed wording is consistent with NUREG-1431.
3. Revise TS 3.3.3.5 ACTION a. to change the required action time from 7 days to 30 days. The required action is also revised to include a requirement to be in HOT STANDBY within the next 6 hours. The proposed changes are consistent with NUREG-1431.
4. Delete TS 3.3.3.5 ACTION b. for the current TS. This eliminates the action to prepare a Special Report if a channel of a Remote Shutdown System function is inoperable for more than 60 days. This proposed change is consistent with NUREG-1431.
5. Re-letter current TS 3.3.3.5 ACTION c. as ACTION b. The statement that TS 3.0.4 is not applicable is consistent with NUREG-1431.
6. Delete Tables 3.3-9 and 4.3-6 and relocate the list of required Remote Shutdown System equipment to the Bases. This is consistent with NUREG-1431.
7. Revise the requirements for decay heat removal in the information relocated to the Bases to allow the use of either AFW flow or steam generator level instead of both as in current TS 3.3.3.5 Table 3.3-9.
8. Simplify the Remote Shutdown System information relocated to the Bases to show only the list of required functions, instruments and control parameters and the required number of channels or functions. This is consistent with NUREG-1431.
9. Revise Surveillance Requirement (SR) 4.3.3.5.1 to apply the channel check only to normally energized Remote Shutdown System instrumentation and to delete the reference to the channel calibration (moved to new SR 4.3.3.5.3). References to Table 4.3-6 are deleted. This is consistent with NUREG-1431.

10. Add SR 4.3.3.5.3 for channel calibration and add a note that the neutron detectors and reactor trip breaker indication are excluded from channel calibration. Excluding the neutron detectors from channel calibration is consistent with NUREG-1431.
11. Revise TS Index page vi to reflect the deletion of the tables.

## 3.0 Background

STPNOC believes that the overall reliability of the plant can be enhanced by increasing the Remote Shutdown System function allowed outage time and by relocating details of the functions to the TS Bases. The changes are based on the requirements for Remote Shutdown in NUREG-1431, the Standard Technical Specifications for Westinghouse plants.

## 4.0 Technical Analysis

The technical basis for each of the 11 items listed in Section 2.0 is provided in Table 4.1.

Table 4.1

| Change | Evaluation |
|---|---|
| 1. Revise TS 3.3.3.5 Limiting Condition for Operation (LCO) to simply state that the Remote Shutdown System functions shall be OPERABLE. References to transfer switches, power or controls and monitoring instrumentation as shown in the associated Table 3.3-9 are deleted.<br><br>Current TS 3.3.3.5 Table 3.3-9 lists the Readout Location, Transfer Switch Location, and Controls Location for remote shutdown instrumentation. The proposed change will relocate these requirements to licensee controlled documents. | It is unnecessary to list specific instruments and controls in the TS to provide adequate assurance that the functions can be performed. GDC 19 requires that remote shutdown capability be provided. The functions are described in the Bases, which is sufficient to assure that the system will be OPERABLE. Listing specific instrumentation and controls is unnecessary and may lead to needless expenditure of licensee and NRC resources processing license amendments to revise the table when the licensee can adequately control the information. These details are not necessary to adequately describe the actual regulatory requirement. Therefore, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. The details relocated to the procedures will be controlled by the plant procedure change process. |

| Change | Evaluation |
|---|---|
| 2. Revise TS 3.3.3.5 ACTION a. to delete the references to transfer switches, power or controls and monitoring instrumentation as shown in the associated Table 3.3-9. The ACTION will be simplified to state the entry condition for the action as "one or more of the number of required remote shutdown monitoring functions inoperable". Add a note to permit separate condition entry for each function. | Same as Item 1. |
| 3. Revise TS 3.3.3.5 ACTION a. to change the required action time from 7 days to 30 days. The required action is also revised to include a requirement to be in HOT STANDBY within the next 6 hours. | Extending the allowed outage time to 30 days is reasonable based on operating experience and the low probability of an event occurring that would require the control room to be evacuated. It is also supported by the STP Probabilistic Risk Assessment (PRA). Including the requirement to be in HOT STANDBY within the next 6 hours is a more restrictive change, but is consistent with a controlled plant shutdown. |
| 4. Delete TS 3.3.3.5 ACTION b. for the current TS. This eliminates the action to prepare a Special Report if a channel of a Remote Shutdown System function is inoperable for more than 60 days. | The current TS requirement essentially allows continued operation. The proposed change will also allow continued operation. Therefore, this change only deletes the requirement to submit a Special Report to the NRC. Deletion of this requirement will not decrease the safety of the plant and reports will still be submitted when required by applicable regulations. |
| 5. Re-letter current TS 3.3.3.5 ACTION c. as ACTION b. | Administrative change |
| 6. Delete Tables 3.3-9 and 4.3-6 and relocate the list of required Remote Shutdown System equipment to the Bases. | Same as Item 1 |

| Change | Evaluation |
|---|---|
| 7. Revise the requirements for decay heat removal in the information relocated to the Bases to allow the use of either AFW flow or steam generator level instead of both as in current TS Table 3.3-9. | The purpose of these indications is to determine if decay heat removal is taking place via the SGs to ensure a safe shutdown. Therefore, adequate information to determine if decay heat removal is occurring via the SGs can be obtained by either of these indications. |
| 8. Simplify the Remote Shutdown System information relocated to the Bases to show only the list of required functions, instruments and control parameters and the required number of channels or functions. | Changing the format of the information and removing the details describing the location of the functions has no effect on the application of the TS to the function. This is an administrative change. |
| 9. Revise Surveillance Requirement (SR) 4.3.3.5.1 to apply the channel check only to normally energized Remote Shutdown System instrumentation and to delete the reference to the channel calibration (moved to new SR 4.3.3.5.3). References to Table 4.3-6 are deleted. | Performing a channel check of this instrumentation is not practical or feasible during power operation. The other changes to this SR are administrative. |
| 10. Add SR 4.3.3.5.3 for channel calibration and add a note that the neutron detectors and reactor trip breaker indication are excluded from channel calibration. | Splitting out the channel calibration requirement from SR 4.3.3.5.1 is an administrative change. The note makes the Remote Shutdown System TS consistent with the requirements already established for neutron detectors and the reactor trip breakers in current TS Table 4.3-1. Excluding neutron detectors from channel calibration is consistent with NUREG-1431. |
| 11. Revise TS Index page vi to reflect the deletion of the tables. | Administrative change |

STPNOC did not include the NUREG-1431 SR for channel calibration of reactor trip breaker indication. This SR is not required in the current TS.

STPNOC did not add the NUREG-1431 SR to perform TADOT on reactor trip breaker open/closed indication at least once per 18 months. The current TS for Remote Shutdown do not include this SR and TS Table 4.3-1 already requires quarterly TADOT on the reactor trip breakers.

## 5.0 Regulatory Safety Analysis

### 5.1 No Significant Hazards Determination

STPNOC has evaluated the proposed amendment to determine if a significant hazards consideration is involved by focusing on the three standards set forth in 10CFR50.92, "Issuance of amendment," as discussed below.

1) Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Because the proposed changes do not involve potential accident initiators, there is no significant increase in the probability of an accident previously evaluated. There is no proposed change to the design basis or configuration of the plant and the extension of the allowed outage time of the Remote Shutdown System functions does not have a significant effect on safety. Consequently there is no significant increase in the consequences of an accident previously evaluated.

2) Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes do not affect how the plant is operated or involve any physical changes to the plant. Therefore there is no possibility of a new or different kind of accident from any previously evaluated.

3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

Except for extending the allowed outage time for Remote Shutdown System function from 7 days to 30 days, the proposed changes are essentially administrative. The evaluation of the extension of the allowed outage time demonstrated that there was no significant reduction in the margin of safety.

Conclusion

Based upon the analysis provided herein, the proposed amendments will not increase the probability or consequences of an accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a

reduction in a margin of safety. Therefore, the proposed amendment meets the requirements of 10 CFR 50.92 and does not involve a significant hazards consideration.

### 5.2 Applicable Regulatory Requirements/Criteria

The Remote Shutdown System is required to provide equipment at appropriate locations outside the control room with a capability to promptly shut down and maintain the unit in a safe condition in MODE 3. STP UFSAR Sec. 7.4.9 describes the design of the Remote Shutdown System and its design bases. The proposed changes to TS 3/4.3.3.5 do not affect the UFSAR description of the STP Remote Shutdown System, its design bases, or performance.

The criteria governing the design and specific system requirements of the Remote Shutdown System are located in 10 CFR 50, Appendix A, GDC 19 (Ref. 1). The Remote Shutdown System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii). As discussed in the evaluations, the proposed changes do not affect compliance with the regulatory basis for the Remote Shutdown System.

## 6.0 Environmental Considerations

10 CFR 51.22(b) specifies the criteria for categorical exclusions from the requirements for a specific environmental assessment per 10 CFR 51.21. This amendment request meets the criteria specified in 10 CFR 51.22(c)(9). The specific criteria contained in this section are discussed below.

**(i) the amendment involves no significant hazards consideration**

As demonstrated in the No Significant Hazards Consideration Determination, the requested license amendment does not involve any significant hazards consideration.

**(ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite**

The requested license amendment involves no change to the facility and does not involve any change in the manner of operation of any plant systems involving the generation, collection or processing of radioactive materials or other types of effluents. Therefore, no increase in the amounts of effluents or new types of effluents would be created.

**(iii) there is no significant increase in individual or cumulative occupational radiation exposure**

The requested license amendment involves no change to the facility and will not increase the radiation dose resulting from the operation of any plant system. Furthermore, implementation of this proposed change will not involve work activities that could contribute to occupational radiation exposure. Therefore, there will be no increase in

individual or cumulative occupational radiation exposure associated with this proposed change.

Based on the above it is concluded that there will be no impact on the environment resulting from this change. The change meets the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to specific environmental assessment by the Commission.

## 7.0 References

7.1 STP UFSAR Sec. 7.4.9
7.2 NUREG-1431 Rev. 2
7.3 TSTF-266 Rev. 3

## 8.0 Precedent

The changes proposed by STPNOC are consistent with NUREG-1431, Rev. 2 and Technical Specification Task Force traveler (TSTF) 266. TSTF-266 references four plant-specific approvals: Clinton, Grand Gulf, River Bend, and Perry.

# ATTACHMENT 2

# PROPOSED TECHNICAL SPECIFICATION CHANGES

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.5 The Remote Shutdown System **functions** ~~transfer switches, power, controls and monitoring instrumentation channels shown in Table 3.3-9~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With **one or more of** the number of **required** remote shutdown monitoring **functions inoperable** ~~channels, transfer switches, power or control circuits less than the Minimum Channels OPERABLE as required by Table 3.3-9~~, restore the inoperable **function(s)** ~~channel(s)~~ to OPERABLE status within **30** ~~7~~ days, or be in **HOT STANDBY within the next 6 hours and in** HOT SHUTDOWN within the **following** ~~next~~ ~~612~~ hours.

**NOTE: Separate condition entry is allowed for each function.**

~~b. With the number of OPERABLE remote shutdown monitoring channels, transfer switches, power or control circuits less than the Total Number of Channels as required by Table 3.3-9, within 60 days restore the inoperable channel(s) to OPERABLE status or, submit a Special Report that defines the corrective action to be taken.~~

**b.** The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5.1 Each **normally energized** remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of **a** ~~the~~ CHANNEL CHECK **at least once per 31 days.** ~~and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.~~

4.3.3.5.2 Each Remote Shutdown System transfer switch, power and control circuit including the actuated components, shall be demonstrated OPERABLE at least once per 18 months.

**4.3.3.5.3 Each required instrumentation channel shall be demonstrated OPERABLE by performance of a CHANNEL CALIBRATION at least once per 18 months. [NOTE: Neutron detectors and reactor trip breaker indication are excluded from CHANNEL CALIBRATION.]**

TABLE 3.3-9

REMOTE SHUTDOWN SYSTEM

| INSTRUMENT | READOUT LOCATION | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|---|
| 1. Neutron Flux - Extended Range | | | |
| a. Startup Rate | ASP*-QDPS** | 2 | 2 |
| b. Flux Level | ASP-QDPS | 2 | 2 |
| 2. Reactor Trip Breaker Indication | ASP-QDPS Reactor Trip Switchgear | 1/trip breaker | 1/trip breaker |
| 3. Reactor Coolant Temperature-Wide Range | | | |
| a. Hot Leg | ASP-QDPS | 4-1/loop | 1/loop - 3 loops# |
| b. Cold Leg | ASP-QDPS | 4-1/loop | 1/loop - 3 loops# |
| 4. Reactor Coolant Pressure-Wide Range/Extended Range | ASP-QDPS | 3 | 2 |
| 5. Pressurizer Water Level | ASP-QDPS | 4 | 2 |
| 6. Steam Line Pressure | ASP-QDPS | 4-1/steam line | 1/steam line - 3 steam lines# |
| 7. Steam Generator Water Level-Wide Range | ASP-QDPS | 4-1/steam generator | 1/steam generator - 3 steam generators# |

TABLE 3.3-9
REMOTE SHUTDOWN SYSTEM

| INSTRUMENT | READOUT LOCATION | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|---|
| 8. Auxiliary Feedwater Flow Rate | ASP-QDPS | 4-1/steam generator | 1/steam generator-3 steam generators# |
| 9. Auxiliary Feedwater Storage Tank Water Level | ASP-QDPS | 3 | 2 |
| 10. (DELETED) | | | |

| TRANSFER SWITCHES AND ASSOCIATED CONTROLS | TRANSFER SWITCH LOCATIONS | CONTROLS LOCATION | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|---|---|
| 1. Steam Generator PORVs | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C)<br>ASP (Train D) | ASP | 4 | 2# |
| 2. Reactor Head Vent Throttle Valves | ZLP-700 (Train A)<br>ZLP-701 (Train B) | ASP | 2 | 1 |
| 3. Reactor Head Vent Isolation Valves | ZLP-700 (Train A)<br>ZLP-701 (Train B) | ASP | 2 pair | 1 pair |
| 4. AFW Pumps and Valves | ZLP-653 (Train A- AFW Pump)<br>ZLP-700 (Train A- AFW Valves)<br>ZLP-654 (Train B - AFW Pump)<br>ZLP-701 (Train B - AFW Valves)<br>ZLP-655 (Train C - AFW Pump)<br>ZLP-709 (Train C - AFW Valves)<br>ASP (Train D) | ASP | 4 | 2# |

TABLE 3.3-9 (Continued)

REMOTE SHUTDOWN SYSTEM

| TRANSFER SWITCHES AND ASSOCIATED CONTROLS | TRANSFER SWITCH LOCATIONS | CONTROLS LOCATION | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|---|---|
| 5. Centrifugal Charging Pumps | ZLP-653 (Train A)<br>ZLP-655 (Train C) | ASP | 2 | 1 |
| 6. Boric Acid Transfer Pumps | ZLP-653 (Train A)<br>ZLP-655 (Train C) | ASP | 2 | 1 |
| 7. Pressurizer PORVs and Block Valves | ZLP-700 (Train A)<br>ZLP-701 (Train B) | ASP | 2 | 1 |
| 8. Accumulator Discharge Isolation Valves and Power Lockouts | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C) | ASP | 3 | 3 |
| 9. Letdown Stop Valves | ZLP-700 (Train A)<br>ZLP-709 (Train B) | ASP | 2 | 1 |
| 10. CCW Pumps and Heat Exchanger Outlet Valves | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C) | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C) | 3 | 2 |
| 11. ECW Pumps | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C) | ZLP-653 (Train A)<br>ZLP-654 (Train B)<br>ZLP-655 (Train C) | 3 | 2 |
| 12. EAB HVAC Fans | ZLP-700 (Train A)<br>ZLP-653 (Train A - Battery Room and Electrical Penetration Space Fans)<br>ZLP-701 (Train B)<br>ZLP-654 (Train B - Battery Room and Electrical Penetration Space Fans) | ZLP-700 (Train A)<br>ZLP-653 (Train A – Battery Room and Electrical Penetration Space Fans)<br>ZLP-701 (Train B)<br>ZLP-654 (Train B – Battery Room and Electrical Penetration Space Fans) | 3 | 2 |

TABLE 3.3-9 (Continued)

REMOTE SHUTDOWN SYSTEM

| TRANSFER SWITCHES AND ASSOCIATED CONTROLS | TRANSFER SWITCH LOCATIONS | CONTROLS LOCATION | TOTAL NO. OF CHANNELS | MINIMUM CHANNELS OPERABLE |
|---|---|---|---|---|
| 12. EAB HVAC Fans (Continued) | ZLP-709 (Train C)<br>ZLP-655 (Train C- Battery Room and Electrical Penetration Space Fans) | ZLP-709 (Train C)<br>ZLP-655 (Train C- Battery Room and Electrical Penetration Space Fans) | | |
| 13. Reactor Containment Fan Coolers | ZLP-700 (Train A)<br>ZLP-701 (Train B)<br>ZLP-709 (Train C) | ZLP-700 (Train A)<br>ZLP-701 (Train B)<br>ZLP-709 (Train C) | 6 | 3 |

* ASP - Auxiliary Shutdown Panel
** QDPS - Qualified Display Processing System
# Must be in the same OPERABLE RCS loop/secondary loop.

TABLE 4.3-6

REMOTE SHUTDOWN MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

| INSTRUMENT | CHANNEL CHECK | CHANNEL CALIBRATION |
|---|---|---|
| 1. Neutron Flux - Extended Range | | |
| a. Startup Rate | M | R |
| b. Flux Level | M | R |
| 2. Reactor Trip Breaker Indication | M | N.A. |
| 3. Reactor Coolant Temperature - Wide Range | | |
| a. Hot Leg | M | R |
| b. Cold Leg | M | R |
| 4. Reactor Coolant Pressure - Wide Range/ Extended Range | M | R |
| 5. Pressurizer Water Level | M | R |
| 6. Steam Line Pressure | M | R |
| 7. Steam Generator Water Level - Wide Range | M | R |
| 8. Auxiliary Feedwater Flow Rate | M | R |
| 9. Auxiliary Feedwater Storage Tank Water Level | M | R |
| 10. (DELETED) | | |

# ATTACHMENT 3

# BASES INSERTS

BACKGROUND

The Remote Shutdown System provides the control room operator with sufficient instrumentation and controls to place and maintain the unit in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility that the control room becomes inaccessible. A safe shutdown condition is defined as MODE 3. With the unit in MODE 3, the Auxiliary Feedwater (AFW) System and the steam generator (SG) safety valves or the SG atmospheric dump valves (ADVs) can be used to remove core decay heat and meet all safety requirements. The long term supply of water for the AFW System and the ability to borate the Reactor Coolant System (RCS) from outside the control room allows extended operation in MODE 3.

If the control room becomes inaccessible, the operators can establish control at the remote shutdown panel, and place and maintain the unit in MODE 3. Not all controls and necessary transfer switches are located at the remote shutdown panel. Some controls and transfer switches will have to be operated locally at the switchgear, motor control panels, or other local stations. The unit automatically reaches MODE 3 following a unit shutdown and can be maintained safely in MODE 3 for an extended period of time.

The OPERABILITY of the remote shutdown control and instrumentation functions ensures there is sufficient information available on selected unit parameters to place and maintain the unit in MODE 3 should the control room become inaccessible.

LCO

The Remote Shutdown System LCO provides the OPERABILITY requirements of the instrumentation and controls necessary to place and maintain the unit in MODE 3 from a location other than the control room. The instrumentation and controls required are listed in Table B 3.3.5-1.

The controls, instrumentation, and transfer switches are required for:

- Core reactivity control (initial and long term),
- RCS pressure control,
- Decay heat removal via the AFW System and the SG safety valves or SG PORVs,
- RCS inventory control via charging flow, and
- Safety support systems for the above Functions, including service water, component cooling water, and onsite power, including the diesel generators.

A Function of a Remote Shutdown System is OPERABLE if all instrument and control channels needed to support the Remote Shutdown System Function are OPERABLE. In some cases, Table B 3.3.5-1 may indicate that the required information or control capability is available from several alternate sources. In these cases, the Function is OPERABLE as long as one channel of any of the alternate instrumentation or control sources is OPERABLE.

The remote shutdown instrument and control circuits covered by this LCO do not need to be energized to be considered OPERABLE. This LCO is intended to ensure the instruments and control circuits will be OPERABLE if unit conditions require that the Remote Shutdown System be placed in operation.

APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

ACTIONS

ACTION a. addresses the situation where one or more required Functions of the Remote Shutdown System are inoperable. This includes the control and transfer switches for any required Function. The Required Action is to restore the required Function to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room. If the Required Action and associated Completion Time of ACTION a. is not met, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 4.3.3.5.1 requires performance of a CHANNEL CHECK once every 31 days to ensure that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. As specified in the Surveillance, a CHANNEL CHECK is only required for those channels, which are normally energized. The Frequency of 31 days is based upon operating experience which demonstrates that channel failure is rare.

SR 4.3.3.5.2 verifies each required Remote Shutdown System control circuit and transfer switch performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the unit can be placed and maintained in MODE 3 from the remote shutdown panel and the local control stations. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. (However, this Surveillance is not required to be performed only during a unit outage.) Operating experience demonstrates that remote shutdown control channels usually pass the Surveillance test when performed at the 18 month Frequency.

SR 4.3.3.5.3 requires a CHANNEL CALIBRATION, which is a complete check of the instrument loop and the sensor. The Frequency of 18 months is based upon operating experience and consistency with the typical industry refueling cycle.

**Table B 3.3.5-1 Remote Shutdown System Instrumentation and Controls**

| | INSTRUMENT | REQUIRED NUMBER OF FUNCTIONS |
|---|---|---|
| 1. | Neutron Flux - Extended Range | |
| | a. Startup Rate | 2 |
| | b. Flux Level | 2 |
| 2. | Reactor Trip Breaker Indication | 1/trip breaker |
| 3. | Reactor Coolant Temperature-Wide Range | |
| | a. Hot Leg | 1/loop - 3 loops# |
| | b. Cold Leg | 1/loop - 3 loops# |
| 4. | Reactor Coolant Pressure-Wide Range/Extended Range | 2 |
| 5. | Pressurizer Water Level | 2 |
| 6. | Steam Line Pressure | 1/steam line - 3 steam lines# |
| 7. | Steam Generator Water Level-Wide Range Or Auxiliary Feedwater Flow Rate | 1/steam generator - 3 steam generators# |
| 8. | Auxiliary Feedwater Storage Tank Water Level | 2 |

| | TRANSFER SWITCHES AND ASSOCIATED CONTROLS | REQUIRED NUMBER OF FUNCTIONS |
|---|---|---|
| 1. | Steam Generator PORVs | 2# |
| 2. | Reactor Head Vent Throttle Valves | 1 |
| 3. | Reactor Head Vent Isolation Valves | 1 pair |
| 4. | AFW Pumps and Valves | 2# |
| 5. | Centrifugal Charging Pumps | 1 |
| 6. | Boric Acid Transfer Pumps | 1 |
| 7. | Pressurizer PORVs and Block Valve | 1 |
| 8. | Accumulator Discharge Isolation Valves and Power Lockouts | 3 |
| 9. | Letdown Stop Valves | 1 |
| 10. | CCW Pumps and Heat Exchanger Outlet Valves | 2 |
| 11. | ECW Pumps | 2 |
| 12. | EAB HVAC Fans | 2 |
| 13. | Reactor Containment Fan Coolers | 3 |

# Must be in the same OPERABLE RCS loop/secondary loop