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

March 30, 2006
NOC-AE-05001914
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 3.3.3.6, "Accident Monitoring Instrumentation"

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 3.3.3.6, "Accident Monitoring Instrumentation" with respect to the required action for inoperable Wide Range Reactor Coolant Temperature, Wide Range Steam Generator Level, and Auxiliary Feedwater Flow.

There are no commitments in this letter.

STPNOC requests approval of the proposed amendment by January 25, 2007 to allow time for implementation prior to the Unit 2 2007 refueling outage. 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

STI: 31906530

If there are any questions regarding the proposed amendment, please contact Mr. A. W. Harrison at (361) 972-7298 or me at (361) 972-7206.

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

Executed on March 30, 2006.
Date

T.J. Jordan
Vice President
Engineering

Attachments:

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

cc:

(paper copy)

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

John Dixon
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

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

(electronic copy)

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

Mohan C. Thadani
U. S. Nuclear Regulatory Commission

Steve Winn
Christine Jacobs
Michael A. Reed
NRG South Texas LP

J. J. Nesrsta
R. K. Temple
E. Alarcon
City Public Service

Jon C. Wood
Cox Smith Matthews

C. Kirksey
City of Austin

ATTACHMENT 1

DESCRIPTION OF CHANGES

AND

SAFETY EVALUATION

1.0 Introduction

The proposed amendment will revise Technical Specification (TS) 3.3.3.6, "Accident Monitoring Instrumentation" requirements for the Reactor Coolant Outlet Temperature (T_{hot} – Wide Range), Reactor Coolant Inlet Temperature (T_{cold} – Wide Range), Steam Generator (SG) Level - Wide Range and Auxiliary Feedwater (AFW) Flow functions. The proposed changes are based in part on the requirements for these functions in the Westinghouse Improved Standard Technical Specifications (ITS), NUREG-1431. The proposed changes will enhance plant reliability by reducing its exposure to unnecessary shutdowns and increase operational flexibility.

2.0 Description

Each of the proposed changes to the Technical Specifications is described in Table 1 and annotated in Attachment 2.

Table 1

Page	Affected Section	Description of Change	Reason for Change
3/4 3-68	Table 3.3-10 2. Reactor Coolant Outlet Temperature – T_{HOT} (Wide Range) 3. Reactor Coolant Inlet Temperature – T_{COLD} (Wide Range)	The Total Number of Channels for the Reactor Coolant Temperature – Wide Range functions is revised from 1/loop to 4 (1/loop) The Minimum Channels Operable requirement for the functions is changed from 1/loop to 2.	The change reflects the redundancy associated with the Reactor Coolant Temperature – Wide Range channels and that the function can be achieved with less than the Total Number of Channels. It is also more consistent with the NUREG-1431 application of TS requirements for these functions to Westinghouse 4-loop plants.
3/4 3-68	Table 3.3-10 8.Steam Generator Water Level – Wide Range 11.Auxiliary Feedwater Flow	The Total Number of Channels for the Steam Generator Water Level – Wide Range and Auxiliary Feedwater Flow are revised from 1/steam generator to 4 (1/steam generator). The Minimum Channels Operable requirement for Steam Generator Water Level – Wide Range is changed from 1/steam generator to 3. The Minimum Channels Operable requirement for Auxiliary Feedwater Flow is changed from 1/steam generator to 3.	The change reflects the redundancy associated with the functions and that the functions can be achieved with less than the Total Number of Channels. It is also more consistent with the NUREG-1431 application of TS requirements for the Steam Generator Water Level function to Westinghouse 4-loop plants.

Page	Affected Section	Description of Change	Reason for Change
3/4 3-70	Table 3.3-10 2. Reactor Coolant Outlet Temperature – T_{HOT} (Wide Range) 3. Reactor Coolant Inlet Temperature – T_{COLD} (Wide Range) 8. Steam Generator Water Level – Wide Range 11. Auxiliary Feedwater Flow	Required ACTION 35 currently states, With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours, or be in at least HOT SHUTDOWN within the next 12 hours. The action is revised to extend the allowed outage time to 30 days with one inoperable channel with a requirement for a Special Report and a 7-day allowed outage time with a shutdown action for more than one inoperable channel: a. With the number of OPERABLE channels one less than the Minimum Channels Operable requirement, restore the inoperable channel to OPERABLE status within 30 days, or submit a Special Report within the next 14 days describing the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status. b. With the number of OPERABLE channels two less than the Minimum Channels Operable requirement, restore one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.	The 48 hour allowed outage time of ACTION 35 is unnecessarily restrictive for these functions and more restrictive than the requirements established in NUREG-1431 for these functions. Each affected function has sufficient redundancy and functional diversity to justify a less restrictive action. The proposed new ACTION 35a is based on the requirements in NUREG-1431. The proposed new ACTION 35b is also based on NUREG-1431 requirements when all channels of a post-accident monitoring function are inoperable. Seven days is an acceptable time based on the low probability of an event requiring the function and the availability of backup sources for the information needed by the operators.
3/4 -70	Table 3.3-10 ACTION 38	Current requirements in ACTION 38 are deleted in their entirety.	No function in Table 3.3-10 references ACTION 38. All previous references to ACTION 38 were eliminated in Amendments 23/13 in a change unrelated to the two functions proposed for revision in this application; however, the action was never deleted from the Technical Specifications. Consequently, the deletion of the current requirements of the action is an administrative change.

3.0 Background

STP's design provides one channel of Reactor Coolant Outlet Temperature (T_{hot} – Wide Range) and Reactor Coolant Inlet Temperature (T_{cold} – Wide Range) for each Reactor Coolant System (RCS) loop. There is also one channel of Steam Generator Level - Wide Range on each of the four steam generators and one channel of Auxiliary Feedwater (AFW) flow on each of the four trains of AFW. The 48 hour allowed outage time in the current Technical Specifications is not commensurate with the low safety significance of these instruments.

4.0 Technical Analysis

A technical review of each of the proposed changes described in Table 1 is provided below. The review identifies the affected instrumentation, describes its function, including relevant references to the STP Updated Final Safety Analysis Report (UFSAR).

The discussion of the function of the affected instrumentation is focused on its accident monitoring functions, which are the functions relevant to Technical Specification 3.3.3.6.

Corresponding Bases change inserts are provided in Attachment 3 for the staff's information.

4.1 Reactor Coolant Outlet Temperature T_{HOT} – Wide Range

Wide Range (WR) T_{hot} is shown in UFSAR Table 7.5-1 as a NRC Regulatory Guide (RG) 1.97 A1, B1, and B2 variable. There is one channel per RCS loop with an indication range of 0 - 700°F. They are Class 1E instruments and provide indication on the Qualified Display Processing System (QDPS) in the control room. Input from each loop channel is also recorded. The WR T_{hot} instrumentation is separate from the T_{hot} input to ESFAS.

This instrumentation is used by the operator during normal operations to control cooling during cold shutdown and ensure the proper relationship between RCS pressure and temperature.

For post-accident functions, the RCS hot leg WR temperature instrumentation provides information to operators to verify adequate core cooling, RCS subcooling, RHR initiation conditions, and in conjunction with the RCS cold leg WR temperature indication, the effectiveness of RCS heat removal by the secondary system. RCS temperature is also used to determine if safety injection flow can be reduced.

System redundancy is provided by having a channel of RCS hot leg WR temperature for each RCS loop. Functional diversity for determination of core cooling identified in UFSAR Table 7B.5-1 includes core exit temperature, reactor

vessel water level, and RCS subcooling. Functional redundancy for determination of secondary heat sink is provided by steam generator water level, AFW flow, and core exit temperature.

The wide range reactor coolant outlet temperature is an input to the cold overpressure mitigation system (COMS). However, the TS for the COMS function is not applicable in MODE 1, 2 & 3 where the Accident Monitoring Instrumentation TS applies.

4.2 Reactor Coolant Inlet Temperature T_{COLD} – Wide Range

Wide Range (WR) T_{cold} is shown in UFSAR Table 7.5-1 as a RG 1.97 A1, B1, and B2 variable. There is one channel per RCS loop with an indication range of 0 - 700°F. They are Class 1E instruments and provide indication on the Qualified Display Processing System (QDPS) in the control room. Input from each loop channel is also recorded. The WR T_{cold} instrumentation is separate from the T_{cold} input to ESFAS.

This instrumentation is used by the operator during normal operations to control cooling during cold shutdown and ensure the proper relationship between RCS pressure and temperature.

For post-accident functions, the RCS cold leg WR temperature can be used by the plant operators, in conjunction with the RCS hot leg WR temperature, to verify the effectiveness of RCS heat removal by the secondary system. RCS cold leg WR temperatures are monitored during steam generator depressurization to ensure that the depressurization does not impose a challenge to the Integrity Critical Safety Function.

System redundancy is provided by having a channel of WR RCS cold leg temperature for each RCS loop. Functional diversity for determination of secondary heat sink identified in UFSAR Table 7B.5-1 includes steam generator water level, AFW flow, and core exit temperature.

The wide range reactor coolant inlet temperature is an input to the cold overpressure mitigation system (COMS). However, the TS for the COMS function is not applicable in MODE 1, 2 & 3 where the Accident Monitoring Instrumentation TS applies.

4.3 Steam Generator Level - Wide Range

The STP design includes 4 wide range steam generator level instruments, one associated with each of the 4 steam generators. The instruments provide indication in the control room. They provide no control or protection functions. Steam Generator Level is monitored in the Emergency Operating Procedures

(EOP) to assure availability of the secondary heat sink for post-accident decay heat removal. The SG level indication for this function in the EOPs is provided by Steam Generator Level – Narrow Range, which is not affected by this proposed change. The wide range SG level is used in the functional restoration procedure for loss of secondary heat sink to determine if RCS feed and bleed should be initiated.

Steam Generator Level – Wide Range is shown in UFSAR Table 7.5-1 as a RG 1.97 A1, B1, B2, and D2 variable. It is identified as a diverse backup to AFW Flow.

System redundancy of this function is provided by having 4 instruments, one for each steam generator. Functional diversity for heat sink availability identified in UFSAR Table 7B.5-1 includes Narrow Range SG Level, AFW flow, core exit temperature, and wide range RCS temperature.

4.4 Auxiliary Feedwater Flow

STP has four trains of AFW, each feeding an associated steam generator. Train A, B, and C have motor-driven AFW pumps and Train D has a turbine-driven AFW pump. Train A, B, and C AFW are powered from ESF Train A, B, and C, respectively. Steam Generator D supplies steam to the Train D turbine-driven AFW pump. Instrumentation and control for the turbine-driven Train D AFW is provided by Train A. The AFW supply piping is cross-connected so that any AFW train can supply any steam generator. If implementation of the cross-connect is required, it is accomplished by manual action from the Control Room.

Each of the four trains of AFW is provided with one channel of AFW flow monitoring.

One train of AFW feeding an intact steam generator is sufficient for post-accident decay heat removal. STP's safety analyses show that three trains of AFW feeding three steam generators are required for sufficient RCS cooling to prevent the pressurizer from going water solid in a loss of normal feedwater (LONF) assuming failure of Train A ESF actuation to start Train A AFW and Train D AFW and with credit for operator action to manually start one of the failed AFW trains from the control room.

Note 'o' to STP UFSAR Table 7.5-1 describes the basis for the AFW Flow monitoring redundancy as being provided by one channel per loop and identifies Steam Generator Level – Wide Range as a diverse backup.

AFW flow is listed in UFSAR Table 7.5-1 as a RG 1.97 A1, B1, and D2 variable.

STP UFSAR Sec. 10.4.9 also describes AFW instrumentation:

"Control room instrumentation is provided to monitor major AFWS parameters, such as the discharge pressure of each AFW pump, turbine-driven AFW pump inlet steam pressure available through the plant computer, and AFW flow to each SG. Turbine-driven pump discharge pressure is available at a control room indicator and through the QDPS; the motor-driven pump discharge pressures are available through the Emergency Response Facilities Data Acquisition and Display System [ERFDADS]. This instrumentation, in combination with the SG level indication described in Section 7.5, provides the operator with reliable indication of the AFWS performance."

The AFW flow transmitters also provide input through QDPS to AFW valve controllers to maintain flow in accordance with design.

AFW flow instrumentation is used in the Emergency Operating Procedures to define the potential loss of heat sink and the need to either establish another steam generator feed source or to initiate core cooling via RCS bleed and feed. It is used in accident classification procedure (Emergency Action Levels – EALs) to indicate the potential for the loss of the fuel rod cladding fission product barrier.

4.5 Safety Basis for Proposed Action

4.5.1 Reactor Coolant Outlet Temperature T_{HOT} – Wide Range Reactor Coolant Inlet Temperature T_{COLD} – Wide Range

Standard requirements for the accident monitoring functions in Westinghouse plants are provided in NUREG-1431. For the wide range reactor coolant temperatures, NUREG-1431 Table 3.3.3-1 shows 2 required channels per loop. As described earlier, the STP design has one channel of T_{HOT} – Wide Range and T_{COLD} – Wide Range per loop.

The proposed TS change to revise the Minimum Channels Operable requirement from a restrictive 1/loop to 2 operable channels (input from any two loops) is acceptable because it accounts for the redundancy associated with these functions. Two operable channels will provide the operator with adequate information to implement the Emergency Operating Procedures.

The current TS requires entry into a 48 hour shutdown action if the 1/loop Minimum Channels Operable requirement for RCS wide range temperature function is not met. 48 hours leaves the operator with little time to implement corrective action before a plant shutdown is required. There is very little likelihood of an event requiring a post-accident monitoring function in the time that one or more channels are inoperable

and imposing a plant shutdown is not a prudent requirement considering the redundancy and functional diversity for the wide range RCS temperature functions.

The proposed change provides substantially more operating margin. No TS action applies as long as there are two operable channels. The 30-day action to restore one inoperable channel or submit a Special Report provides time for the station to correct the inoperable condition or to implement a pre-planned alternative indication.

The requirement for two operable channels retains a protection from single failure causing a complete loss of function. In the unlikely case that operation with one of the required channels inoperable for more than 30 days, ACTION 35a requires the implementation of an alternate method of monitoring, which also protects the affected function from single failure.

With both required channels inoperable, the 7-day shutdown requirement of ACTION 35b limits the time that the plant can operate without the function; however, as described above, diverse indications are still available for the operator in the unlikely event of an accident requiring the function. As stated in the NUREG-1431 Bases for Post Accident Monitoring (PAM):

> ...The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur.

4.5.2 SG Level – Wide Range and AFW Flow

Standard requirements for the accident monitoring functions in Westinghouse plants are provided in NUREG-1431. For the SG Level – Wide Range, NUREG-1431 Table 3.3.3-1 shows 2 required channels per steam generator. As described earlier, the STP design has one channel of SG Level – Wide Range for each steam generator.

For the AFW Flow, NUREG-1431 Table 3.3.3-1 shows 2 required channels per steam generator. As described earlier, the STP design has one channel of AFW Flow for each steam generator.

One train of AFW feeding an intact steam generator is sufficient for post-accident decay heat removal. However, the event selected for determination of the minimum channels operable requirement for AFW flow and wide-range steam generator level indication is the loss of normal feedwater (LONF) with worst-case single failure. For the LONF, the licensing basis requirement for the pressurizer not to go solid is more restrictive than the requirement for decay heat removal. STP's safety analyses show that three trains of AFW feeding three steam generators are required for sufficient RCS cooling to prevent the pressurizer from going water solid in a LONF assuming failure of Train A ESF actuation to start Train A AFW and Train D AFW and with credit for operator action to manually start one of the failed AFW trains from the control room. For this event, the proposed minimum channels operable requirement is 3 for both AFW and SG water level – NR. This is acceptable because no additional failures of AFW functions are required to be postulated so that any three of the AFW trains and associated flow indication can be assumed to be available.

For one inoperable channel of wide range SG level indication or one inoperable channel of AFW flow indication, Required Action A in NUREG-1431 is to restore the inoperable channel within 30 days or submit a report. The NUREG Bases for the required action states:

> The 30-day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

STP's current Technical Specifications require 1 channel per steam generator. Note 'o' to STP UFSAR Table 7.5-1, states, "...the required redundancy is provided by one channel per loop." Although the note is appended to the AFW Flow function, it applies equally to the diverse steam generator level function that it also mentions. As discussed above, the proposed change to the TS establishes a Minimum Channels Operable requirement of 3 channels for both functions. Thus, consistent with the NUREG-1431 precedent, STPNOC proposes a 30-day allowed outage time with a requirement for a report if one of the required channels is inoperable. The redundancy and availability of diverse indication described earlier provide the safety basis. Continued operation beyond the 30 days requires an alternate method of monitoring the function, which provides single failure protection in the very unlikely event the function is required in that time.

Because only one train of AFW feeding one intact steam generator is adequate for post-accident decay heat removal, there is design margin in having four trains of

AFW with cross-connect capability such that any AFW train can feed any one of the steam generators. This AFW margin extends to the AFW Flow function. Similarly, since only one of four steam generators is required for effective decay heat removal, there is design margin for the steam generator level requirements. Consequently, it can be concluded that the minimum channels operable requirement of 3 channels for both functions is satisfactory for the post-accident decay heat removal and identification of the need to initiate feed and bleed aspect of their function and the 30-day action is acceptable.

For conditions where none of a function's channels are operable, the required completion time in Required Action C of the NUREG is 7 days. If the function is not restored, a shutdown is required. The Bases for the NUREG states:

> "...The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur."

Consistent with the precedent in NUREG-1431, the proposed TS would require entry into the 7-day shutdown action if two of the three required SG wide range level instruments or two of the three required AFW flow instruments were inoperable. There is safety margin in this requirement in the availability of the functionally diverse indications and that unavailability of the level indication or the AFW flow indication does not make the associated steam generator unavailable as a heat sink if it is receiving flow. With respect to the LONF event, the 7-day action is conservative because steam generator level can still be used to confirm AFW flow to the steam generator in the absence of AFW flow indication in the unlikely event of an accident with two of the AFW flow channels inoperable. With respect to the post-accident decay heat removal and determination of the need to initiate feed and bleed, the 7-day action is conservative because it can reasonably be expected that AFW flow and indication and steam generator level indication will be available for at least one generator in the unlikely event of an accident with two channels of either function inoperable.

4.5.3 Administrative Change to Technical Specification 3.3.3.6 ACTION 38

ACTION 38 in the current Technical Specifications is not referenced in Table 3.3-10. It was the action originally referenced by containment pressure, steam line pressure, and steam generator water level – narrow range. Those functions were

revised to reference ACTION 43 in Amendment 23/13 to the Technical Specifications, leaving no accident monitoring function referencing ACTION 38.

Deletion of the ACTION 38 requirements is an administrative change with no safety significance.

5.0 Regulatory Safety Analysis

5.1 No Significant Hazards Determination

STPNOC has evaluated whether or not a significant hazards consideration is involved with the proposed amendment 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.

The proposed increase in the allowed outage times for the Reactor Coolant Outlet Temperature – Wide Range, Reactor Coolant Inlet Temperature – Wide Range, Steam Generator Level – Wide Range and the AFW Flow does not involve a significant increase in the probability of an accident previously evaluated because these are accident monitoring functions that have no effect on the potential for accident initiation. The proposed deletion of the existing requirements in ACTION 38 is an administrative change. Since these requirements are not currently applied to any plant equipment, this change cannot affect the probability of any accident previously evaluated.

The proposed increase in the allowed outage times for the Reactor Coolant Outlet Temperature – Wide Range, Reactor Coolant Inlet Temperature – Wide Range, and Steam Generator Level – Wide Range and AFW Flow does not involve a significant increase in the consequences of an accident previously evaluated because the availability of redundant and diverse indications provides adequate assurance that the operator will be able to determine the post-accident status of the secondary heat sink .

The proposed deletion of the existing requirements in ACTION 38 is an administrative change. Since these requirements are not currently applied to any plant equipment, this change cannot affect the consequence of any 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 increase in the allowed outage times for the Reactor Coolant Outlet Temperature – Wide Range, Reactor Coolant Inlet Temperature – Wide Range, Steam Generator Level – Wide Range and the AFW Flow does not create the possibility of a new or different kind accident from any accident previously evaluated because the proposed change affects only the allowed outage time for accident monitoring instrumentation and involves no changes to plant design, plant configuration or operating procedures.

The proposed deletion of the existing requirements in ACTION 38 is an administrative change. Since these requirements are not currently applied to any plant equipment, this change cannot create the possibility of any kind of accident.

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

Response: No.

The proposed increase in the allowed outage times for the Reactor Coolant Outlet Temperature – Wide Range, Reactor Coolant Inlet Temperature – Wide Range, Steam Generator Level – Wide Range and AFW Flow does not involve a significant reduction in the margin of safety because the availability of redundant and diverse indications provides adequate assurance that the operator will be able to determine the post-accident status of the secondary heat sink .

The proposed deletion of the existing requirements in ACTION 38 is an administrative change. Since these requirements are not currently applied to any plant equipment, this change cannot affect the margin of safety.

Conclusion

Based upon the analysis provided herein, the proposed amendments do not involve a significant hazards consideration.

5.2 Applicable Regulatory Requirements/Criteria

Accident Monitoring Instrumentation:

Required accident monitoring instrumentation ensures that there is sufficient information available on selected unit parameters to monitor and to assess unit status and behavior following an accident. These essential instruments are identified in the STP UFSAR where it addresses the recommendations of Regulatory Guide 1.97 as required by Supplement 1 to NUREG-0737, "TMI Action Plan Requirements for Applicants for an Operating License".

The instrument channels required to be OPERABLE by TS 3.3.3.6 include parameters identified during unit specific implementation of Regulatory Guide 1.97 as Type A variables.

Type A variables are included in this Technical Specification Limiting Condition for Operation (LCO) because they provide the primary information required for the control room operator to take specific manually controlled actions for which no automatic control is provided, and that are required for safety systems to accomplish their safety functions for design basis accidents (DBAs).

As discussed in the Safety Bases, there is adequate redundancy for the affected accident monitoring functions. The proposed changes to the Technical Specifications would not change the function of the affected instrumentation. Therefore STPNOC has determined that there is no impact on compliance with the regulatory requirements.

6.0 Environmental Considerations

10 CFR 51.22(b) specifies the criteria for categorical exclusion 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

1. NUREG-1431 "Standard Technical Specifications, Westinghouse Plants"
2. STP UFSAR

ATTACHMENT 2

ANNOTATED
TECHNICAL SPECIFICATION PAGES

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	TOTAL NO. OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
1. Containment Pressure	4	1	43
2. Reactor Coolant Outlet Temperature- T_{HOT} (Wide Range)	**4** (1/loop)	**2** ~~1/loop~~	35
3. Reactor Coolant Inlet Temperature- T_{COLD} (Wide Range)	**4** (1/loop)	**2** ~~1/loop~~	35
4. Reactor Coolant Pressure - Wide Range and Extended Range	3	1	37
5. Pressurizer Water Level	4	1	43
6. Steam Line Pressure	4/steam generator	1/steam generator	43
7. Steam Generator Water Level - Narrow Range	4/steam generator	1/steam generator	43
8. Steam Generator Water Level - Wide Range	**4** (1/steam generator)	**3** ~~1/steam generator~~	35
9. Refueling Water Storage Tank Water Level	3	1	37
10. Auxiliary Feedwater Storage Tank Water Level	3	1	37
11. Auxiliary Feedwater Flow	**4** (1/steam generator)	**3** ~~1/steam generator~~	35
12. Reactor Coolant System Subcooling Margin Monitoring	2	1	36

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 35 - **a.** With the number of OPERABLE channels **one** less than the Minimum Channels Operable requirement, restore ~~at least one~~ **the** inoperable channel to OPERABLE status within **30 days** ~~48 hours, or be in at least HOT SHUTDOWN within the next 12 hours~~ **or submit a Special Report within the next 14 days describing the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.**

b. With the number of OPERABLE channels two less than the Minimum Channels Operable requirement, restore one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours

ACTION 36 - a. With the number of OPERABLE channels one less than the Total Number of Channels requirements, restore one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.

b. With the number of OPERABLE channels less than the Minimum Channels Operable requirements, restore at least one inoperable channel to OPERABLE status within 48 hours, or be in at least HOT SHUTDOWN within the next 12 hours.

ACTION 37 - a. With the number of OPERABLE channels one less than the Total Number of Channels requirements, restore the inoperable channel to OPERABLE status within 31 days, or be in at least HOT SHUTDOWN within the next 12 hours.

b. With the number of OPERABLE channels two less than the Total Number of Channels requirement, restore at least one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.

c. With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

~~ACTION 38 - a. With the number of OPERABLE channels one less than the Total Number of Channels requirements, restore the inoperable channel to OPERABLE status within 90 days, or be in at least HOT SHUTDOWN within the next 12 hours.~~

~~b. With the number of OPERABLE channels two less than the Total Number of Channels requirements, restore the inoperable channel to OPERABLE status within 31 days, or be in at least HOT SHUTDOWN within the next 12 hours.~~

~~c. With the number of OPERABLE channels three less than the Total Number of Channels requirement, restore at least one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.~~

~~d. With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.~~

ATTACHMENT 3

TECHNICAL SPECIFICATION BASES INSERTS

(For Information Only)

Reactor Coolant Outlet Temperature (T_{hot}) Wide Range and Reactor Coolant Inlet Temperature (T_{cold}) Wide Range (ACTION 35)

There is one channel of Wide Range (WR) T_{hot} per RCS loop with an indication range of 0 - 700°F. They are Class 1E instruments and provide indication on the Qualified Display Processing System (QDPS) in the control room. Input from each loop channel is also recorded.

For post-accident functions, the RCS hot leg WR temperature provides information to operators to verify adequate core cooling, RCS subcooling, and in conjunction with the RCS cold leg WR temperature indication, the effectiveness of RCS heat removal by the secondary system. RCS temperature is also used to determine if safety injection flow can be reduced.

System redundancy is provided by having a channel of WR RCS hot leg temperature for each RCS loop. Functional diversity for determination of core cooling identified in UFSAR Table 7B.5-1 includes core exit temperature, reactor vessel water level, and RCS subcooling. Functional redundancy for determination of secondary heat sink is provided by steam generator water level, AFW flow, and core exit temperature.

There is one channel of Wide Range (WR) T_{cold} per RCS loop with an indication range of 0 - 700°F. They are Class 1E instruments and provide indication on the Qualified Display Processing System (QDPS) in the control room. Input from each loop channel is also recorded.

For post-accident functions, the RCS cold leg WR temperature can be used by the plant operators, in conjunction with the RCS hot leg WR temperature, to verify the effectiveness of RCS heat removal by the secondary system. RCS cold leg WR temperatures are monitored during steam generator depressurization to ensure that the depressurization does not impose a challenge to the Integrity Critical Safety Function.

System redundancy is provided by having a channel of WR RCS cold leg temperature for each RCS loop. Functional diversity for determination of secondary heat sink identified in UFSAR Table 7B.5-1 includes steam generator water level, AFW flow, and core exit temperature.

The Minimum Channels Operable requirement for the Reactor Coolant Temperature – Wide Range functions is 2 operable channels (input from any two loops). This is acceptable because it accounts for the redundancy associated with these functions. Two operable channels will provide the operator with adequate information to implement the Emergency Operating Procedures.

The 7-day shutdown requirement of ACTION 35b limits the time that the plant can operate without the function; however, as described above, diverse indications are still available for the operator in the unlikely event of an accident requiring the function.

ACTION 35a establishes a 30-day allowed outage time with a requirement for a Special Report if one of the channels is inoperable. The redundancy and availability of diverse indication provide the safety basis. Continued operation beyond the 30 days requires an alternate method of monitoring the function, which provides single failure protection in the unlikely event the function is required in that time.

ACTION 35b requires entry into the 7-day shutdown action if both of the required channels are inoperable. There is safety margin in this requirement in the availability of the functionally diverse indications. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur.

Steam Generator Water Level – Wide Range and AFW Flow (ACTION 35)

One train of AFW feeding an intact steam generator is sufficient for post-accident decay heat removal. However, the event selected for determination of the minimum channels operable requirement for AFW flow and wide-range steam generator level indication is the loss of normal feedwater (LONF) with worst-case single failure. For the LONF, the licensing basis requirement for the pressurizer not to go solid is more restrictive than the requirement for decay heat removal. STP's safety analyses show that three trains of AFW feeding three steam generators are required for sufficient RCS cooling to prevent the pressurizer from going water solid in a LONF assuming failure of Train A ESF actuation to start Train A AFW and Train D AFW and with credit for operator action to manually start one of the failed AFW trains from the control room. For this event, the minimum channels operable requirement is 3 for both AFW and SG water level – NR. This is acceptable because no additional failures of AFW functions are required to be postulated so that any three of the AFW trains and associated flow indication can be assumed to be available.

For one inoperable channel of wide range SG level indication or one inoperable channel of AFW flow indication, ACTION 35.a requires restoration the within 30 days or submit a report. The 30-day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels, the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval. Continued operation beyond the 30 days requires an alternate method of monitoring the function, which provides single failure protection in the very unlikely event the function is required in that time.

Because only one train of AFW feeding one intact steam generator is adequate for post-accident decay heat removal, there is design margin in having four trains of AFW with cross-connect capability such that any AFW train can feed any one of the steam generators. This AFW margin extends to the AFW Flow function. Similarly, since only one of four steam generators is required for effective decay heat removal, there is design margin for the steam generator level requirements. Consequently, it can be concluded that the minimum channels operable requirement of 3 channels for both functions is satisfactory for the post-accident decay heat removal and identification of the need to initiate feed and bleed aspect of their function and the 30-day action is acceptable.

ACTION 35.b requires entry into the 7-day shutdown action if two of the three required SG wide range level instruments or two of the three required AFW flow instruments were inoperable. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. There is safety margin in this requirement in the availability of the functionally diverse indications and that unavailability of the level indication or the AFW flow indication does not make the associated steam generator unavailable as a heat sink if it is receiving flow. With respect to the LONF event, the 7-day action is conservative because steam generator level can still be used to confirm AFW flow to the steam generator in the absence of AFW flow indication in the unlikely event of an accident with two of the AFW flow channels inoperable. With respect to the post-accident decay heat removal and determination of the need to initiate feed and bleed, the 7-day action is conservative because it can reasonably be expected that AFW flow and indication and steam generator level indication will be available for at least one generator in the unlikely event of an accident with two channels of either function inoperable. Continuous operation with two required channels inoperable in a function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the function limits the risk that the PAM function will be in a degraded condition should an accident occur.