ITS NRC Questions

Id	**1101**
NRC Question Number	**KAB-035**
Category	**Technical**
ITS Section	**3.3**
ITS Number	**3.3.1**
DOC Number	
JFD Number	**10**
JFD Bases Number	
Page Number (s)	**74**
NRC Reviewer Supervisor	**Carl Schulten**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**On page 74 of Attachment 1, volume 8, ITS 3.3.1 justification for deviations item 10 discusses deletion of the turbine trip functions. Turbine trip is a protective instrumentation limiting safety system setting used to trip the reactor as listed in CTS 2.3.a.7.B. 10 CFR 50.36(c)(1) states that TS will include safety limits, limiting safety system settings and limiting control settings. Please add turbine trip (function 16) and associated SR to ITS 3.3.1 or provide a safety analysis for further evaluation as a beyond scope change.**
Attach File 1	
Attach File 2	
Issue Date	**11/19/2009**
Added By	**Kristy Bucholtz**
Date Modified	
Modified By	
Date Added	**11/19/2009 9:13 AM**
Notification	**NRC/LICENSEE Supervision**

Licensee Response/NRC Response/NRC Question Closure

Id	**1011**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**12/2/2009 7:05 AM**
Closure Statement	
Response Statement	

10CFR50.36(c)(1)(A) defines limiting safety system setting as "Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions."

To review this question DEK researched back to the original TS issued for Kewaunee in 1973. The 1973 Kewaunee TS listed the turbine trip function in specifications:

- **2.3.a.7, Other Trips, Turbine Trip,**
- **Table TS 3.5-2, Instrument Operation Conditions for Reactor Trip, Functional Unit 11, Turbine Trip (Overspeed Protection), and**
- **Table TS 4.1-1, Minimum Frequencies for Check, Calibrations and Test of Instrument Channels, Items 28, Turbine Overspeed Protection Trip Channel.**

Thus in the Operating License Kewaunee was originally issued, the Turbine Trip feature was aligned with the LSSS section, the LCO section, and the Surveillance Section for overspeed protection. Four License Amendments (LA) modified the LCO and surveillance sections, eventually deleting them from TS, but it appears the turbine trip from the LSSS section was not deleted. These LAs are

- **LA 51 (ADAMS Accession NO. ML020740166),**
- **LA 71 (ADAMS Accession NO. ML020740612),**
- **LA 97 (ADAMS Accession NO. ML020740334),**
- **LA 121 (ADAMS Accession NO. ML020770371).**

LA 51 changed the title in TS Table TS 3.5-2, item 11, to Turbine Overspeed Protection and listed each channel in the surveillance table (Table TS 4.1-1). Additionally, permissible block condition was added if only two channels were operable to test one of the two operable channels. A basis section was also added that stated that the

overspeed protection feature was for missile protection.

License Amendment 71, the requirements contained in specification Table TS 3.5-2, Item 11 were relocated to TS 3.4.d. The basis section contained in TS 3.5 concerning the turbine overspeed protections was also relocated to TS section 3.4 basis. The NRC's safety evaluation for this change states, "This item was removed from the Reactor Protection and ESF Instrumentation Systems section that addressed instrumentation necessary to ensure reactor safety. Since the primary purpose of the Turbine Overspeed Protection System is the protection of the turbine, this item was placed in the Power Conversion portion of the Technical Specifications, a more appropriate section. Since the substantive requirements of the specification have not changed, but have been merely relocated to a more appropriate section of the Technical Specifications, this change is merely administrative in nature and has no effect on safety."

License Amendment 97 incorporated an NRC staff recommendation regarding the required minimum condensate storage tank inventory, additional restrictions on the operation of the auxiliary feedwater system, and revisions to the surveillance requirements for the turbine driven auxiliary feedwater pump. During this change Kewaunee TS item 3.4.d was moved to TS item 3.4.c and reformatted, containing essentially the same requirements.

License Amendment 121 removed the turbine overspeed protection system (TOPS) from Kewaunee TS section 3.4.c and TS Table 4.1-1. The NRC's safety evaluation stated, "the staff has concluded the TOPS requirements are not required to be in the TS under 10 CFR 50.36 or § 182a of the Atomic Energy Act, and are not required to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety. Further, they do not fall within any of the four criteria set forth in the Commission's Final Policy Statement discussed above. In addition, the staff finds that sufficient regulatory controls exist under 10 CFR 50.59 to address future changes to these requirements. Therefore, the staff finds the licensee's proposal to relocate the TOPS requirements from the TS to the USAR acceptable."

Therefore, DEK concludes that the Turbine Trip feature, located in CTS TS 2.3.a.7, was inadvertently overlooked during the removal of the turbine overspeed trip specification and relocation to the Kewaunee USAR, which was previously reviewed against the 10CFR50.36 criteria.

Question Closure Date

Attachment 1

Attachment

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2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**12/2/2009 7:10 AM**
Modified By	
Date Modified	

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 4 of 138

Licensee Response/NRC Response/NRC Question Closure

Id	**2441**
NRC Question Number	**KAB-035**
Select Application	**NRC Response**
Response Date/Time	**3/4/2010 6:00 PM**
Closure Statement	
Response Statement	**Please see attached document.**
Question Closure Date	
Attachment 1	**Kewaunee turb trip.doc** (27KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**3/4/2010 7:55 AM**
Modified By	
Date Modified	

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 5 of 138

Technical Specifications are required by Title 10 of the *Code of Federal Regulation*s Part 50 Section 50.36 to contain limiting safety system settings (LSSS). LSSS for nuclear reactors are defined as settings for automatic protective devices related to those variable having significant safety functions.

NUREG-1431 includes, "Reactor Trip System (RTS) Instrumentation" in STS 3.3.1. The RTS initiates a reactor trip, based on the values of selected unit parameters, to protect against violating the core fuel design limits and Reactor Coolant System (RCS) pressure boundary during anticipated operational occurrences (AOOs) and to assist the Engineered Safety Features (ESF) Systems in mitigating accidents. This is achieved by specifying LSSS in terms of parameters directly monitored by the RTS.

On August 24, 2009 Dominion Energy Kewaunee, Inc. (DEK) requested an amendment to the Operating License for Kewaunee Power Station (KPS). The amendment request would revise Kewaunee's current Technical Specifications (CTS) to improved Technical Specifications (ITS) consistent with the Standard Technical Specifications (STS) in NUREG-1431, Revision 3, "Standard Technical Specifications Westinghouse Plants." Kewaunee's CTS Section 2.3, "Limiting Safety System Settings – Protective Instrumentation" includes a list of Limiting Safety System Settings (LSSS) that trip the reactor, CTS 2.3.a.7.b of this list is the Turbine Trip Function of the Reactor Trip System (RTS) instrumentation, i.e., reactor trip from turbine trip. DEK is proposing to delete the Turbine Trip LSSS from CTS 2.3.a.7.b and with the exception of the turbine trip instrumentation, DEK has proposed: (1) inclusion of the LSSS instrumentation in ITS 3.3.1, and (2) relocating the LSSS allowable values to the Setpoint Control Program in the administrative controls section of ITS consistent with TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS."

Our review determined that the turbine trip in CTS 2.3.a.7.b trips the reactor to protect the reactor (and the public health and safety) from the consequences of the heat/sink mismatch that would develop when steam flow from the steam generators is abruptly cut off. The reactor trip from turbine trip also serves as a backup trip and provides defense in depth. Therefore the NRC staff concludes that the reactor trip from turbine trip is a LSSS in the current TS.

Explain how removing reactor trip from turbine trip from the CTS maintains: (1) public health and safety, and (2) compliance with 10 CFR 50.36(c)(1)(ii)(A).

Licensee Response/NRC Response/NRC Question Closure

Id	**2541**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**3/12/2010 10:15 AM**
Closure Statement	
Response Statement	**This response is provided to respond to the NRC question dated 3/4/2010.**

10 CFR 50.36 (c)(1)(ii)(a) states that "Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions. Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded."

CTS 2.3., "LSSS - Protective Instrumentation," states that it applies to trip settings for instruments monitoring variables related to reactor protection. It further states that its objective is to prevent *principal* (emphasis added) process variables from exceeding a SAFETY LIMIT. CTS 2.3.a.7.B lists a Turbine Trip as an "other" trip for RPS. However, no specific trip setting is provided. It should be noted that it is the only automatic trip function listed in CTS 2.3 that does not have a trip setpoint or LSSS specified. Thus, the NRC reviewer's statement in the question that KPS is requesting to relocate the LSSS values to the setpoint control program is not applicable to the Turbine Trip function. Furthermore, CTS 2.3.a.7.C lists the Manual Reactor trip. KPS has no indication that the NRC considers the Manual Reactor Trip function as an LSSS (it is not a process variable), even though it is also in the CTS section for LSSS. Thus, just because the Turbine Trip is in the CTS 2.3, this does not necessarily make it an LSSS. Specifically, it is not a "principal" process variable. As stated by the NRC in their question, the Turbine Trip is a backup trip that provides defense in depth.

10 CFR 50.36(c)(2)(ii) states that "A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:" Four criteria are then listed. KPS has reviewed each of these four criteria and determined that the Turbine Trip function does not meet any of the first three. Specifically, the main criteria the Turbine trip function could have met is criterion 3, which states that the feature is part of a primary success path and which functions to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. As stated in the previous KPS response, the Turbine Trip function is not assumed in any accident analysis. The NRC reviewer also stated in their question that

it is a backup trip, thus it appears the NRC agrees that it is not assumed in any accident analysis (i.e., it does not meet criterion 3). KPS also reviewed the plant specific PRA to determine if it met criterion 4. Criterion 4 specifically states that it is a feature which operating experience or probabilistic risk assessment has shown to be a significant to public health and safety. As stated in our previous response, KPS has determined that the Turbine Trip function does not meet criteria 4. Therefore, the Turbine Trip function does not meet any of the 4 criteria listed in 10 CFR 50.36(c)(2)(ii). The regulations do not require backup trips to be included in the Technical Specifications; only those that meet at least one of the four criteria.

The purpose of the Turbine Trip function is to provide a backup trip of the reactor if a heat sink mismatch develops when steam flow from the steam generators is abruptly cut off. This can occur when a loss of external electrical load occurs. USAR Section 14.1.9 provides the details for a loss of external electrical load. It is defined as a complete loss of steam load or turbine trip from full power without a direct reactor trip. Thus, an initial assumption of the analysis is that the Turbine Trip function does not result in a reactor trip. This anticipated transient is analyzed as a turbine trip from full power because it bounds both events; the loss of external electrical load and turbine trip. USAR Section 14.1.9.2 describes the method of analysis, and one of the initial assumptions is that the Turbine trip function does not directly trip the reactor. The USAR evaluates three separate scenarios, and the reactor is analyzed to be tripped by either the Overtemperature delta T (USAR Tables 14.1.9-1 and 14.1.9-3) or Pressurizer Pressure - High (USAR Table 14.1.9-2). Furthermore, all three of the scenarios assume the main steam safety valves are OPERABLE to mitigate the resulting pressure transient. The analyses demonstrates, as stated in USAR Section 14.1.9.4, that the plant design is such that a total loss of external electrical load without a direct or immediate reactor trip presents no hazard to the integrity of the primary RCS or main steam system. Both the Overtemperature delta T and Pressurizer Pressure - High RPS trips are included in ITS 3.3.1. The requirements in the ITS 3.3.1 ensure that even with a single failure, the two RPS trips can still meet their assumed safety function (i.e., provide a reactor trip). Therefore, these RPS trips ensure the public health and safety is maintained during this transient.

In conclusion, it is the KPS position that the public health and safety during the loss of external electrical load and turbine trip events is ensured by RPS trips in ITS 3.3.1 (specifically Overtemperature delta T and Pressurizer Pressure - High), and that it is these trips that meet the LSSS requirements of 10 CFR 50.36(c)(1)(ii)(A), not the Turbine Trip function.

Question Closure Date

Attachment 1

Attachment 2

Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**3/12/2010 10:14 AM**
Modified By	
Date Modified	

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Licensee Response/NRC Response/NRC Question Closure

Id	**2691**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**4/5/2010 9:00 AM**
Closure Statement	
Response Statement	**While the DEK position concerning whether or not the Turbine Trip Function is an LSSS and whether or not it is assumed in any accident or transient analysis in the UFSAR has not changed, (our position remains as stated in our third response to this NRC question), DEK will add into the KPS ITS submittal requirements for the Turbine Trip reactor trip Functions. A draft markup regarding this change is attached. The draft markup concerning the Turbine Trip Functions is consistent with the KPS design. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**KAB-035 Markup.pdf** (2MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**4/5/2010 9:02 AM**
Modified By	
Date Modified	

A01

Enclosure (4 of 8) Q&A to Attachment 1, Volume 8 (Section 3.3) 11 of 138

Table 3.3.1-1
Function

LA01

A03

LA01

Applicability

TABLE TS 3.5-2

INSTRUMENT OPERATION CONDITIONS FOR REACTOR TRIP

REQUIRED

		1	2	3	4	5	6
NO.	FUNCTIONAL UNIT	NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
17. 17	Reactor Trip Breaker (RTB)	2	1	2	-	The RTBs may be bypassed for up to 8 hrs. for surveillance testing or maintenance	Maintain HOT SHUTDOWN and open the RTBs
18	(Independently Test Shunt and Undervoltage Trip Attachments)	2/bkr	1	2	-		After 72 hours maintain HOT SHUTDOWN and open the RTBs

M13 — 4

Add proposed ACTION O — L02

L02

Add proposed Required Action R.1 and associated Completion Time. — L03

Add proposed Required Action R.2 and associated Completion Time. — M08

Add proposed Applicability and ACTION C — M09

Add proposed Functions 20.a and 20.b and ACTION S — M15

Table 3.3.1-1 Function

SR 3.3.1.1 SR 3.3.1.10 SR 3.3.1.5, SR 3.3.1.13

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

A06

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
16.e 24. Turbine First Stage Pressure	Each shift -1	Each refueling cycle -10	Monthly -13	18 months L08
25. Deleted				See ITS 3.8.1
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly -5	Includes auto load sequencer; 92 days on STAGGERED TEST BASIS L09 M12
27. Deleted			Add proposed Applicability and number of Required Channels	A12
28. Deleted			Add proposed ACTION N	L14
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	See ITS 3.3.3
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	See ITS 3.7.8
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

See ITS 3.3.3

Add proposed SR 3.3.1.13 for Function 16.a

Add proposed SR 3.3.1.11 for Functions 16.a, 16.c and 16.d

Add proposed SR 3.3.1.5 for Function 16.b

M14

Add proposed SR 3.3.1.10 for Function 20.a and SR 3.3.1.15 for Functions 20.a and 20.b

M15

6. Reactor Trip Interlocks

Protective instrumentation settings for reactor trip interlocks shall be as follows:

A. Prior to exceeding 12.2% of RATED POWER, the low pressurizer pressure trip, high pressurizer level trip, the low reactor coolant flow trips (for both loops), and the turbine trip-reactor trip are made functional.

B. Prior to exceeding 10% of RATED POWER, the single loop loss-of-flow trip is made functional.

LA02

7. Other Trips

A. Undervoltage ≥ 75% of normal voltage

B. Turbine trip

C. Manual trip

D. Safety injection trip (Refer to Table TS 3.5-1 for trip settings)

LA02

(Function 16.a) every 18 months. Additionally, ITS Table 3.3.1-1 requires performance of an ACTUATION LOGIC TEST (ITS SR 3.3.1.5) for the Power Range Neutron Flux, P-7 (Function 16.b). ITS SR 3.3.1.5 requires performance of an ACTUATION LOGIC TEST every 92 days on a STAGGERED TEST BASIS. ITS SR 3.3.1.11 requires performance of CHANNEL CALIBRATION in accordance with the Setpoint Control Program every 18 months. This surveillance is modified by a Note which excludes the neutron detectors from the CHANNEL CALIBRATION. ITS SR 3.3.1.13 requires performance of a COT every 18 months. This changes the CTS by requiring performance of a COT, CHANNEL CALIBRATION and an ACTUATION LOGIC TEST on the Permissive/Interlocks that was not required in the CTS.

The addition of these test is acceptable because the COT, CHANNEL CALIBRATION and ACTUATION LOGIC TEST will verify that the Permissive/Interlocks are functioning properly and will perform their required safety functions. A COT injects a signal into the channel to verify the OPERABILITY of all the devices. A CHANNEL CALIBRATION adjusts the output of the channel so that it will respond within the parameters that the channel monitors. An ACTUATION LOGIC TEST verifies that the output logic is appropriate for the input parameters. This change is designated as more restrictive because Surveillance Requirements are being added to the ITS that were not required in the CTS.

Insert M15

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table TS 3.5-2 has four columns stating various requirements for each Functional Unit. These columns are titled "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," "MINIMUM OPERABLE CHANNELS," and "MINIMUM DEGREE OF REDUNDANCY." ITS Table 3.3.1-1 does not contain the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns. This changes the CTS by moving the information provided in the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns to the Bases. Note that Discussion of Changes M01 describes the changes to the number of channels required by the LCO and Discussion of Change A03 describes the change in the title of the "MINIMUM OPERABLE CHANNELS" column.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels (which includes all of the installed channels) and the appropriate Condition to enter if a required channel is inoperable. In addition,

INSERT M15

The CTS has no specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine Trip - Turbine Stop Valve Closure reactor trips, except for a line item in CTS 2.3.a.7, which only specifies that there is a turbine trip. ITS Table 3.3.1-1 provides the requirements for these two trips (Functions 20.a and 20.b), including the number of required channels, the Applicability, an ACTION to take if a channel is inoperable (ACTION S), and Surveillance Requirements (ITS SR 3.3.1.10 and SR 3.3.1.15). This changes the CTS by adding specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine trip - Turbine Stop Valve Closure reactor trip Functions.

The Turbine Trip Functions anticipate the loss of heat removal capabilities of the secondary system following a turbine trip. While these trip Functions are not assumed in any accident or transient in the UFSAR, they act to minimize the pressure/temperature transient on the reactor and act as a backup trip to the Pressurizer Pressure - High reactor trip. These Functions, including the associated ACTION and Surveillance Requirements, are being added to the KPS ITS consistent with the fourth DEK response to NRC question KAB-035. In addition, the proposed ACTION (ITS 3.3.1 ACTION S) when a channel is inoperable is based upon WCAP-14333. DEK has performed an evaluation associated with the WCAP to justify the new ACTION. This change is designated as more restrictive because new requirements are being included in the ITS related to the Turbine Trip reactor trip that is not required in the CTS.

this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS Table TS 3.5-2 Notes contains Setting Limits for Permissive/Interlocks P-6, P-7, P-8, and P-10. CTS 2.3.a.1 specifies the reactor trip settings for Nuclear Flux instrumentation. CTS 2.3.a.2 specifies the reactor trip settings for the pressurizer. CTS 2.3.a.3.A specifies Reactor Coolant Temperature – Overtemperature settings. CTS 2.3.a.3.B specifies Reactor Coolant Temperature Overpower settings. CTS 2.3.a.4 specifies the Reactor Coolant Flow settings. CTS 2.3.a.5 specifies the Steam Generator settings. CTS 2.3.a.6 specifies the Reactor Trip Interlock settings. CTS 2.3.a.7 specifies other Trips which include Undervoltage trip, turbine trip, manual trip, and safety injection trip. ITS 3.3.1 does not contain Setting Limits for the RPS instrumentation. This changes the CTS by moving the Setting Limits and the reactor trip settings for Nuclear Flux instrumentation, pressurizer, Reactor Coolant Temperature, Steam Generator, Undervoltage trip, ~~turbine trip, manual trip,~~ and safety injection trip to the Setpoint Control Program.

Note that there are no Setting Limits for the Turbine Trip or the Manual Trip, thus no settings are being moved; only the line item is being deleted.

The removal of these Setting Limits is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels and the appropriate Condition to enter if a required channel is inoperable. In addition, this change is acceptable because the removed information will be adequately controlled in the Setpoint Control Program. Changes to the Setpoint Control Program are made under 10 CFR 50.59, which ensures that changes are properly evaluated. This change is designated as a less restrictive removal of detail change because Allowable Value/Setpoint Information is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Note (a) to CTS Table TS 4.1-1 Channel Description 1 (Nuclear Power Range) in the Remarks Section states that the weekly Channel Check contains a heat balance. Note (b) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the monthly CHANNEL FUNCTIONAL TEST contains the signal to ΔT and bistable action (permissive, rod stop, and trips). Note (c) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the Effective Full Power quarterly CHANNEL CALIBRATION contains upper and lower chambers for axial off-set using incore detectors. ITS 3.3.1 does not contain these requirements. This changes the CTS by moving these details to the Bases.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
S DOC M15 Move to after ACTION R on Page 3.3.1-9 ~~N.~~ One Turbine Trip channel inoperable.	~~[~~----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ~~----------REVIEWER'S NOTE----------~~ ~~The below Note should be used for plants with installed bypass test capability.~~ ~~One channel may be bypassed for up to 12 hours for surveillance testing.~~ ~~----------]~~ ~~N.1~~ Place channel in trip. S OR ~~N.2~~ Reduce THERMAL POWER to < ~~[P-9]~~. 7	 72 hours 76 hours
DOC L14 ~~O.~~ One train inoperable. N	----------NOTE---------- One train may be bypassed for up to ~~[4]~~ hours for surveillance testing provided the other train is OPERABLE. ---------- ~~O.~~1 Restore train to OPERABLE status. N OR ~~O.~~2 Be in MODE 3. N	 24 hours 30 hours

10 10 9 ~~10~~ 10 4 2 4 4

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 17 of 138

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Table TS 3.5-2 Functional Unit 17 ~~S.~~ R One trip mechanism inoperable for one RTB.	~~S~~.1 R Restore inoperable trip mechanism to OPERABLE status. OR ~~S~~.2 R Be in MODE 3.	48 hours 4 54 hours 4

Move ACTION S here from Page 3.3.1-7

SURVEILLANCE REQUIREMENTS

----------NOTE----------

Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function. P

	SURVEILLANCE		FREQUENCY
Table TS 4.1-1 Channel Descriptions 1, 7, 11.a, 12, 24, DOC M10	SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
Table TS 4.1-1 Channel Description 1	SR 3.3.1.2	----------NOTE---------- Not required to be performed until ~~1~~ 12 hours after THERMAL POWER is ≥ 15% RTP. ---------- Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculations results exceed power range channel output by more than +2% RTP.	2 24 hours

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SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
Table TS 4.1-1 Channel Description 2.a	SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[92] days	2
Table TS 4.1-1 Channel Descriptions 5, 6, 7, 8.a, 11.a, 12 and 24, DOC M15	SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Stet. Perform CHANNEL CALIBRATION in accordance with the Setpoint Control Program. For Function 20.a, the CHANNEL CALIBRATION does not have to be performed in accordance with the Setpoint Control Program.	[18] months	10 8 5 2
DOC M10, DOC M11, DOC M14	SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION in accordance with the Setpoint Control Program.	[18] months	5 2
Table TS 4.1-1 Channel Description 4	SR 3.3.1.12	----------NOTE---------- This Surveillance shall include verification of Reactor Coolant System resistance temperature detector bypass loop flow rate. ---------- Perform CHANNEL CALIBRATION in accordance with the Setpoint Control Program.	[18] months	5 2
Table TS 4.1-1 Channel Description 1, DOC M14	SR 3.3.1.13	Perform COT.	18 months	
Table TS 4.1-3 Equipment Tests 1.b and 1.c	SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[18] months	2

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 19 of 138

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.15	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	Prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	[18] months on a STAGGERED TEST BASIS

CTS

All changes are 1 unless otherwise noted

P

Table 3.3.1-1 (page 3 of 7) 5
Reactor Trip System Instrumentation
Protection

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-3 Equipment Test 1.a, DOC A11, DOC L13	11. Reactor Coolant Pump (RCP) BreakerPosition							
	a. Single Loop	1[f]	1 per RCP	L	SR 3.3.1.14	NA	NA	5
	b. Two Loops	1[g] (e)	1 per RCP	M	SR 3.3.1.14	NA	NA	5
Table TS 3.5-2 Functional Unit 13, Table TS 4.1-1 Channel Description 8.a	12. Undervoltage RCPs	1[e]	2 [3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [4760] V	[4830] V	3 5 7
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-1 Channel Description 8a	13. Underfrequency RCPs	1[e]	2 [3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [57.1] Hz	[57.5] Hz	3 5 7
Table TS 3.5-2 Functional Unit 12, Table TS 4.1-1 Channel Description 11a	14. Steam Generator (SG) Water Level - Low Low	1,2	3 [4 per SG]	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%	3 5 7
	15. SG Water Level - Low	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%	5 7
Table TS 3.5-2 Functional Unit 16, Table TS 4.1-1 Channel Description 12	Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [42.5]% full steam flow at RTP	[40]% full steam flow at RTP	5 7
20	~~16.~~ Turbine Trip							
	a. Low Fluid Oil Pressure	~~1[h]~~ 1[f]	3	~~N~~ M	SR 3.3.1.10 SR 3.3.1.15	≥ [750] psig	[800] psig	10
	b. Turbine Stop Valve Closure	~~1[h]~~ 1[f]	~~4~~ 2	~~N~~ M	~~SR 3.3.1.10~~ SR 3.3.1.15	≥ [1]% open	[1]% open	

Stet with changes

DOC M15

Move to after Function 19 on page 3.3.1-19

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) Interlock 4

(h) Above the P-9 (Power Range Neutron Flux) interlock. 10

----------REVIEWER'S NOTE----------

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

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CTS

All changes are 1 unless otherwise noted

P

Table 3.3.1-1 (page 5 of 7) 5
Reactor Trip System Instrumentation
Protection

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 17, Table TS 4.1-3 Equipment Test 1.a, DOC M09	20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	2 → 1 each per RTB	R → S	SR 3.3.1.4	NA	NA	4 5
		3[b], 4[b], 5[b]	2 → 1 each per RTB	C	SR 3.3.1.4	NA	NA	4 5
Table TS 4.1-1 Channel Description 26, DOC A12, DOC L14	21. Automatic Trip Logic	1,2	2 trains	N → Ø	SR 3.3.1.5	NA	NA	4 5
	Move Function 20 here	3[b], 4[b], 5[b]	2 trains	C	SR 3.3.1.5	NA	NA	5

18 19

----------REVIEWER'S NOTE---------- 5

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 22 of 138

(increasing times), that could impact safety, do not normally vary such that they would not be detected during other required surveillances (e.g., CHANNEL CALIBRATIONS). Since the addition of these tests would be a major burden (plant design does not readily lend itself to such testing) with little gain in safety, ISTS SR 3.3.1.16 has not been added.

8. A Note to ISTS SR 3.3.1.10 requires the CHANNEL CALIBRATION to include verification that time constants are adjusted to the prescribed values. ITS SR 3.3.1.10 does not include this Note since it does not apply to any ITS Table 3.3.1-1 Functions that include time constants.

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, and K are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Conditions D, E, and K.

INSERT JFD 10

10. ~~ISTS Table 3.3.1-1 Function 16 (including Note h) provides the requirements for the Turbine Trip Function. This Function is not included in the KPS ITS. This Function is not assumed in any accident or transient in USAR Chapter 14. Therefore, it is not being added to the KPS ITS. This is also consistent with the current Technical Specifications, which does not include this RPS Function.~~

11. ISTS Table 3.3.1-1 Functions 17 (Reactor Trip Breakers (RTBs)) and 18 (Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms) requires performance of a TADOT (ISTS SR 3.3.1.4) every 62 days on a STAGGERED TEST BASIS. Based on KPS's review of 15376, Revision 1 ("Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times"), dated March 2003, the justification used to extend the Surveillance Test Interval from monthly on a STAGGERED TEST BASIS (i.e., each breaker tested every two months) to 62 days on a STAGGERED TEST BASIS (i.e., each breaker tested every four months) is not applicable to KPS since KPS tests the breakers monthly. Therefore, ITS SR 3.3.1.4 will contain the KPS current licensing requirement and the TADOT will be performed on a 31 day frequency.

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INSERT JFD 10

Based on the fourth KPS response to NRC question KAB-035, DEK has added the Turbine Trip RPS Function into the ITS submittal. Changes to the Function requirements in ITS Table 3.3.1-1 have been made based on the KPS design. The Turbine Stop Valve Closure Function does not require a CHANNEL CALIBRATION Surveillance (ISTS SR 3.3.1.10) since the Function is a limit switch. Thus, only the TADOT Surveillance (ISTS SR 3.3.1.15) has been added. The CHANNEL CALIBRATION Surveillance for the Low Fluid Oil Pressure Function has been modified by a Note, since the Function is not assumed in any accident or transient analysis in the KPS UFSAR. Both the Function number in the Table and the ACTION designator have been changed to preclude unnecessary administrative burdens since this Function and its associated ACTION have been added late in the review process.

KAB 065 page changes. Page added for info. Not sure if any changes need to be made with page.

All changes are 1 unless otherwise noted

P

BASES

BACKGROUND (continued)

Nominal Trip

Allowable Values and RTS Setpoints

the

Nominal Trip Setpoints

calculation

The trip setpoints used in the bistables are based on the analytical limits stated in Reference 2. The ~~selection~~ of ~~these~~ trip setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 6), the Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservative with respect to the analytical limits. A detailed description of the methodology used to calculate the Allowable Values and trip setpoints, including their explicit uncertainties, is provided in the "RTS/ESFAS Setpoint Methodology Study" (Ref. 7) which incorporates all of the known uncertainties applicable to each channel. The magnitudes of these uncertainties are factored into the determination of each trip setpoint and corresponding Allowable Value. The trip setpoint entered into the bistable is more conservative than that specified by the Allowable Value (LSSS) to account for measurement errors detectable by the COT. The Allowable Value serves as the Technical Specification OPERABILITY limit for the purpose of the COT. ~~One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.~~

P

the SCP

NTSP

The as-left tolerance and as-found tolerance band methodology is provided in ~~Ref. xx~~.

the SCP

~~7~~

as-found

STET w/changes

2

NTSP

NTSP

ensures

is

NTSP

the

The trip setpoint is the value at which the bistable is set and is the expected value to be achieved during calibration. The trip setpoint value ensures the LSSS and the safety analysis limits are met for surveillance interval selected when a channel is adjusted based on stated channel uncertainties. Any bistable is considered to be properly adjusted when the "as left" setpoint value is within the band for CHANNEL CALIBRATION uncertainty allowance (i.e., ± rack calibration and comparator setting uncertainties). The trip setpoint value is therefore considered a "nominal" value (i.e., expressed as a value without inequalities) for the purposes of COT and CHANNEL CALIBRATION.

-

NTSP

as-left tolerance

and

NTSP

2

Nominal

, in conjunction with the use of as-found and as-left tolerances, together

Trip setpoints consistent with the requirements of the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed).

2

Note that the Allowable Values listed in the SCP are the least conservative value of the as-found setpoint that a channel can have during a periodic CHANNEL CALIBRATION, CHANNEL OPERATIONAL TEST, or a TRIP ACTUATING DEVICE OPERATIONAL TEST that requires trip setpoint verification.

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Info only. Provided to verify that no changes are necessary to this page

All changes are 1 unless otherwise noted

P

BASES

BACKGROUND (continued)

Each channel of the process control equipment can be tested on line to verify that the signal or setpoint accuracy is within the specified allowance requirements of Reference 3. Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SRs section.

the SCP

2

Reactor Protection Instrument Rack (RPIR)

Solid State Protection System

RPIR

The SSPS equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of SSPS, each performing the same functions, are provided. If one train is taken out of service for maintenance or test purposes, the second train will provide reactor trip and/or ESF actuation for the unit. If both trains are taken out of service or placed in test, a reactor trip will result. Each train is packaged in its own cabinet for physical and electrical separation to satisfy separation and independence requirements. The system has been designed to trip in the event of a loss of power, directing the unit to a safe shutdown condition.

RPIR

An interlock on the reactor trip bypass breakers prevents both trains from being tested at the same time.

RPIR

The SSPS performs the decision logic for actuating a reactor trip or ESF actuation, generates the electrical output signal that will initiate the required trip or actuation, and provides the status, permissive, and annunciator output signals to the main control room of the unit.

RPIR

The bistable outputs from the signal processing equipment are sensed by the SSPS equipment and combined into logic matrices that represent combinations indicative of various unit upset and accident transients. If a required logic matrix combination is completed, the system will initiate a reactor trip or send actuation signals via master and slave relays to those components whose aggregate Function best serves to alleviate the condition and restore the unit to a safe condition. Examples are given in the Applicable Safety Analyses, LCO, and Applicability sections of this Bases.

Reactor Trip Switchgear

The RTBs are in the electrical power supply line from the control rod drive motor generator set power supply to the CRDMs. Opening of the RTBs interrupts power to the CRDMs, which allows the shutdown rods and control rods to fall into the core by gravity. Each RTB is equipped with a bypass breaker to allow testing of the RTB while the unit is at power.

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KAB-065 page changes also shown. The changes for KAB-065 are in green or have a green border. Changes for this one are in red with a red border

All changes are 1 unless otherwise noted

BACKGROUND (continued)

During normal operation the output from the SSPS is a voltage signal that energizes the undervoltage coils in the RTBs and bypass breakers, if in use. When the required logic matrix combination is completed, the SSPS output voltage signal is removed, the undervoltage coils are de-energized, the breaker trip lever is actuated by the de-energized undervoltage coil, and the RTBs and bypass breakers are tripped open. This allows the shutdown rods and control rods to fall into the core. In addition to the de-energization of the undervoltage coils, each breaker is also equipped with a shunt trip device that is energized to trip the breaker open upon receipt of a reactor trip signal from the SSPS. Either the undervoltage coil or the shunt trip mechanism is sufficient by itself, thus providing a diverse trip mechanism.

The decision logic matrix Functions are described in the functional diagrams included in Reference 3. In addition to the reactor trip or ESF, these diagrams also describe the various "permissive interlocks" that are associated with unit conditions. Each train has a built in testing device that can automatically test the decision logic matrix Functions and the actuation devices while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The RTS functions to maintain the SLs during all AOOs and mitigates the consequences of DBAs in all MODES in which the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

INSERT 3

Each of the analyzed accidents and transients can be detected by one or more RTS Functions. The accident analysis described in Reference 4 takes credit for most RTS trip Functions. RTS trip Functions not specifically credited in the accident analysis are ~~qualitatively~~ implicitly credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RTS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RTS trip Functions that were credited in the accident analysis.

, except for the Turbine Trip Functions,

Permissive and interlock setpoints allow the blocking of trips during plant startups, and restoration of trips when the permissive conditions are not satisfied, but they are not explicitly modeled in the Safety Analyses. These permissives and interlocks ensure that the starting conditions are consistent with the safety analysis, before perventive or mitigating actions occur. Because these permissives or interlocks are only one of multiple conservative starting assumptions for the accident analysis, they are generally considered as nominal values without regard to measurement accuracy.

The LCO requires all instrumentation performing an RTS Function, listed in Table 3.3.1-1 ~~in the accompanying LCO,~~ to be OPERABLE. A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

~~associated Allowable Value and provided the trip setpoint "as-left" value is adjusted to a value within the "as-left" calibration tolerance band of the Nominal Trip Setpoint. A trip setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions.~~ 2

INSERT 4 2

The LCO generally requires OPERABILITY of four or three channels in each instrumentation Function, two channels of Manual Reactor Trip in each logic Function, and two trains in each Automatic Trip Logic Function. Four OPERABLE instrumentation channels in a two-out-of-four configuration are required when one RTS channel is also used as a control system input. This configuration accounts for the possibility of the shared channel failing in such a manner that it creates a transient that requires RTS action. In this case, the RTS will still provide protection, even with random failure of one of the other three protection channels. Three OPERABLE instrumentation channels in a two-out-of-three configuration are generally required when there is no potential for control system and protection system interaction that could simultaneously create a need for RTS trip and disable one RTS channel. The two-out-of-three and two-out-of-four configurations allow one channel to be tripped during maintenance or testing without causing a reactor trip. Specific exceptions to the above general philosophy exist and are discussed below.

except for Steam Generator level and Pressurizer level which uses 3 channels

P P P P

Protection

Reactor Trip System Functions

The safety analyses and OPERABILITY requirements applicable to each RTS Function are discussed below:

P

1. Manual Reactor Trip

   The Manual Reactor Trip ensures that the ~~control room~~ operator can initiate a reactor trip at any time by using either of two reactor trip switches in the control room. A Manual Reactor Trip accomplishes the same results as any one of the automatic trip Functions. It is used by the reactor operator to shut down the reactor whenever any parameter is rapidly trending toward its Trip Setpoint.

   The LCO requires two Manual Reactor Trip channels to be OPERABLE. Each channel is controlled by a manual reactor trip switch. Each channel activates the reactor trip breaker in both trains. Two independent channels are required to be OPERABLE so that no single random failure will disable the Manual Reactor Trip Function.

KAB 065 page changes. Page added for info. Not sure if any changes need to be made with with page.

2

INSERT 4

The Allowable Value specified in the SCP is the least conservative value of the as-found setpoint that the channel can have when tested, such that a channel is OPERABLE if the as-found setpoint is conservative with respect to the Allowable Value during a CHANNEL CALIBRATION, or CHANNEL OPERATIONAL TEST (COT). As such, the Allowable Value differs from the [NTSP] by an amount [greater than or] equal to the expected instrument channel uncertainties, such as drift, during the surveillance interval. In this manner, the actual setting of the channel ([NTSP]) will ensure that a SL is not exceeded at any given point of time as long as the channel has not drifted beyond ~~that~~ expected during the surveillance interval. Note that, although the channel is OPERABLE under these circumstances, the trip setpoint must be left adjusted to a value within the as-left tolerance, in accordance with uncertainty assumptions stated in the referenced setpoint methodology (as-left criteria), and confirmed to be operating within the statistical allowances of the uncertainty terms assigned (as-found criteria). 4

within the as-found tollerance and is

tolerances

In this manner, the actual setting of the channel (NTSP) will ensure that a SL is not exceeded at any given point of time as long as the channel has not drifted beyond expected tolerances during the surveillance intervals.

~~However, there is also some point beyond which the channel may not be able to perform its function due to, for example, greater than expected drift. This value needs to be specified in the Technical Specifications in order to define OPERABILITY of the devices and is designated as the Allowable Value.~~ If the actual setting of the channel is found to be conservative with respect to the Allowable Value but is beyond the as-found tolerance band, the channel is OPERABLE but degraded ~~because a potential degraded condition has been identified. During the SR performance the condition of the channel will be evaluated~~. This evaluation will consist of resetting the channel setpoint to the [NTSP] (within the allowed tolerance), and the channel's response ~~evaluated.~~ If the channel is functioning as required and is expected to pass the next surveillance, then the channel can be restored to service at the completion of the surveillance. ~~If any of the above-described evaluations determine that the channel is not performing as expected the channel is degraded and its operability status cannot be verified, therefore it is inoperable because it may not perform its protective functions if needed before the next surveillance test. If the channel setpoint cannot be reset to the [NTSP], or if the actual setting of the channel is found to be non-conservative with respect to the Allowable Value, the channel is inoperable.~~ After the surveillance is completed, the channel's as-found setting will be entered into the Corrective Action Program for further evaluation. 4 4

. The degraded condition of the channel will be further evaluated during performance of the SR.

evaluatiing

is OPERABLE and

A trip setpoint may be set more conservative that the [NTSP] as necessary in response to plant conditions. However, in this case, the operability of this instrument must be verified based on the [field setting] and not the NTSP. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions. 4 4

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All changes are 1 unless otherwise noted

P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 and by the RHR System in MODE 4, 5, or 6. The MFW System is in operation only in MODE 1 or 2 and, therefore, this trip Function need only be OPERABLE in these MODES.

Stet with changes

20

~~16~~. Turbine Trip

Move to after Function 19 on Page B 3.3.1-33

a. Turbine Trip - Low Fluid Oil Pressure

The Turbine Trip - Low Fluid Oil Pressure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip Function acts to minimize the pressure/temperature transient on the reactor. Any turbine trip from a power level below the P-~~9~~ setpoint, 7 10 approximately ~~50~~% power, will not actuate a reactor trip. Three pressure switches monitor the control oil pressure in the Turbine Electrohydraulic Control System. A low pressure condition sensed by two-out-of-three pressure switches will actuate a reactor trip. These pressure switches do not provide any input to the control system. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function and RCS integrity is ensured by the pressurizer safety valves. ~~5~~

The LCO requires three channels of Turbine Trip - Low Fluid Oil Pressure to be OPERABLE in MODE 1 above P-~~9~~. 7

Below the P-~~9~~ setpoint, a turbine trip does not actuate a reactor trip. In MODE 2, 3, 4, 5, or 6, there is no potential for a turbine trip, and the Turbine Trip - Low Fluid Oil Pressure trip Function does not need to be OPERABLE.

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All changes are 1 unless otherwise noted

P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Stet with changes

Move to after Function 19 on Page B 3.3.1-33

b. Turbine Trip - Turbine Stop Valve Closure

The Turbine Trip - Turbine Stop Valve Closure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip from a power level below the P-9 setpoint, approximately 50% power. This action will not actuate a reactor trip. The trip Function anticipates the loss of secondary heat removal capability that occurs when the stop valves close. Tripping the reactor in anticipation of loss of secondary heat removal acts to minimize the pressure and temperature transient on the reactor. This trip Function will not and is not required to operate in the presence of a single channel failure. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function, and RCS integrity is ensured by the pressurizer safety valves. This trip Function is diverse to the Turbine Trip - Low Fluid Oil Pressure trip Function. Each turbine stop valve is equipped with one limit switch that inputs to the RTS. If all four limit switches indicate that the stop valves are all closed, a reactor trip is initiated.

10 7 both 5

The LSSS for this Function is set to assure channel trip occurs when the associated stop valve is completely closed.

two

The LCO requires four Turbine Trip - Turbine Stop Valve Closure channels, one per valve, to be OPERABLE in MODE 1 above P-9. All four channels must trip to cause reactor trip.

7 Both

Below the P-9 setpoint, a load rejection can be accommodated by the Steam Dump System. In MODE 2, 3, 4, 5, or 6, there is no potential for a load rejection, and the Turbine Trip - Stop Valve Closure trip Function does not need to be OPERABLE.

17. Safety Injection Input from Engineered Safety Feature Actuation System

The SI Input from ESFAS ensures that if a reactor trip has not already been generated by the RTS, the ESFAS automatic actuation logic will initiate a reactor trip upon any signal that initiates SI. This is a condition of acceptability for the LOCA. However, other transients 5

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All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCPs Breaker Open (Two Loops); 3
- 3
- Undervoltage RCPs; and
- Underfrequency RCPs.

; Turbine Trip - Low Fluid Oil Pressure; and Turbine trip - Turbine Stop Valve Closure.

or, in the case of the Turbine trip Functions, provide a backup scram during a loss of load event

These reactor trips are only required when operating above the P-7 setpoint (approximately 10% power). The reactor trips provide protection against violating the DNBR limit. Below the P-7 setpoint, the RCS is capable of providing sufficient natural circulation without any RCP running.

(2) on decreasing power, the P-7 interlock automatically blocks reactor trips on the following Functions:

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCP Breaker Position (Two Loops); 3
- Undervoltage RCPs; and 3
- Underfrequency RCPs.

Trip Setpoint and Allowable Value are not applicable to the P-7 interlock because it is a logic Function and thus has no parameter with which to associate an LSSS.

The P-7 interlock is a logic Function with train and not channel identity. Therefore, the LCO requires one channel per train of Low Power Reactor Trips Block, P-7 interlock to be OPERABLE in MODE 1.

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All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms

The LCO requires both the Undervoltage and Shunt Trip Mechanisms to be OPERABLE for each RTB that is in service. The trip mechanisms are not required to be OPERABLE for trip breakers that are open, racked out, incapable of supplying power to the Rod Control System, or declared inoperable under Function 19 above. OPERABILITY of both trip mechanisms on each breaker ensures that no single trip mechanism failure will prevent opening any breaker on a valid signal.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

21. Automatic Trip Logic

The LCO requirement for the RTBs (Functions 19 and 20) and Automatic Trip Logic (Function 21) ensures that means are provided to interrupt the power to allow the rods to fall into the reactor core. Each RTB is equipped with an undervoltage coil and a shunt trip coil to trip the breaker open when needed. Each RTB is equipped with a bypass breaker to allow testing of the trip breaker while the unit is at power. The reactor trip signals generated by the RTS Automatic Trip Logic cause the RTBs and associated bypass breakers to open and shut down the reactor.

The LCO requires two trains of RTS Automatic Trip Logic to be OPERABLE. Having two OPERABLE channels ensures that random failure of a single logic channel will not prevent reactor trip.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

Move Function 20 here from pages B 3.3.1-25 and B 3.3.1-26

The RTS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

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BASES

ACTIONS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, WCAP-15376, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-15376 or WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval. 7

A Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.1-1.

In the event a channel's Trip Setpoint is found non-conservative with respect to the Allowable Value, or the transmitter, instrument loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the protection Function(s) affected. 2

SCP NTSP STET or the channel is not functioning as required,

When the number of inoperable channels in a trip Function exceed those specified in one or other related Conditions associated with a trip Function, then the unit is outside the safety analysis. Therefore, LCO 3.0.3 must be immediately entered if applicable in the current MODE of operation.

----------REVIEWER'S NOTE----------
Certain LCO Completion Times are based on approved topical reports. In order for a licensee to use these times, the licensee must justify the Completion Times as required by the staff Safety Evaluation Report (SER) for the topical report. 7

A.1

Condition A applies to all RTS protection Functions. Condition A addresses the situation where one or more required channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.1-1 and to take the Required Actions for the protection functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

All changes are 1 unless otherwise noted

P

BASES

ACTIONS (continued)

status and the 4 additional hours allowed to reduce THERMAL POWER to below the P-8 setpoint are justified in Reference 11. 8 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

M.1 and M.2

Condition M applies to the RCP Breaker Position (Two Loops) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be placed in trip within [6] hours. If the channel cannot be placed in trip within the [6] hours, then THERMAL POWER must be reduced below the P-7 setpoint within the next 6 hours. 4

This places the unit in a MODE where the LCO is no longer applicable. This Function does not have to be OPERABLE below the P-7 setpoint because other RTS Functions provide core protection below the P-7 setpoint. The [6] hours allowed to place the channel in trip and the 6 additional hours allowed to reduce THERMAL POWER to below the P-7 setpoint are justified in Reference 11. P 8 4 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

Stet with changes

S

~~N.1 and N.2~~

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

~~Condition N applies to Turbine Trip on Low Fluid Oil Pressure or on Turbine Stop Valve Closure. With one channel inoperable, the inoperable channel must be placed in the trip condition within 72 hours. If placed in the tripped condition, this results in a partial trip condition requiring only one additional channel to initiate a reactor trip. If the channel cannot be restored to OPERABLE status or placed in the trip condition, then power must be reduced below the P-9 setpoint within the next 4 hours. The 72 hours allowed to place the inoperable channel in the tripped condition is justified in Reference 8. Four hours is allowed for reducing power.~~ 5 7

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All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

Stet with changes

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

[The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of the other channels. The 12 hour time limit is justified in Reference 8.] 8

8

----------REVIEWER'S NOTE----------
The below text should be used for plants with installed bypass test capability:

The Required Actions are modified by a Note that allows placing one channel in bypass for up to 12 hours while performing routine surveillance testing. The 12 hour time limit is justified in Reference 8.
---------- 5 8

N

Ø.1 and Ø.2 5

N P

Condition Ø applies to the SI Input from ESFAS reactor trip and the RTS Automatic Trip Logic in MODES 1 and 2. These actions address the train orientation of the RTS for these Functions. With one train inoperable, 24 hours are allowed to restore the train to OPERABLE status (Required Action Ø.1) or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of 24 hours (Required Action Ø.1) is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The 24 hours allowed to restore the inoperable RTS Automatic Trip Logic train to OPERABLE status is justified in Reference 8. The Completion Time of 6 hours (Required Action Ø.2) is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. 5 5 5 5 5

The Required Actions have been modified by a Note that allows bypassing one train up to [4] hours for surveillance testing, provided the other train is OPERABLE. [The [4] hour time limit for testing the RTS Automatic Trip logic train may include testing the RTB also, if both the Logic test and RTB test are conducted within the [4] hour time limit. The [4] hour time limit is justified in Reference 8.] 5 8

----------REVIEWER'S NOTE----------
The below text should replace the bracketed information in the previous paragraph if WCAP-14333 and WCAP-15376 are being incorporated:

The [4] hour time limit for the RTS Automatic Trip Logic train testing is greater than the 2 hour time limit for the RTBs, which the logic train 8

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All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

S.1 and S.2 (5)

Condition S applies to the RTB Undervoltage and Shunt Trip Mechanisms, or diverse trip features, in MODES 1 and 2. With one of the diverse trip features inoperable, it must be restored to an OPERABLE status within 48 hours or the unit must be placed in a MODE where the requirement does not apply. This is accomplished by placing the unit in MODE 3 within the next 6 hours (54 hours total time). The Completion Time of 6 hours is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. With the unit in MODE 3, ACTION C would apply to any inoperable RTB trip mechanism. The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition P. (5) (14)

The Completion Time of 48 hours for Required Action S.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval. (5)

Move ACTIONS S.1 and S.2 on page B 3.3.1-43 here

SURVEILLANCE REQUIREMENTS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval. (7)

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 37 of 138

KAB 065 page changes are in green. Changes for this change is red.

All changes are 1 unless otherwise noted

P

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.9

SR 3.3.1.9 is the performance of a TADOT and is performed every [92] days, as justified in Reference 9. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. 4

The SR is modified by a Note that excludes verification of setpoints from the TADOT. Since this SR applies to RCP undervoltage and underfrequency relays, setpoint verification requires elaborate bench calibration and is accomplished during the CHANNEL CALIBRATION.

SR 3.3.1.10

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. 4

INSERT 7

~~CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint methodology. The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology.~~ 2 2

The Frequency of 18 months is based on the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

SR 3.3.1.10 is modified by a Note stating that this test shall include verification that the time constants are adjusted to the prescribed values where applicable. 5

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KAB 065 page changes are in green or outlined in green. The changes for this change are in red and outlined in red.

2

INSERT 7

~~in accordance with the assumptions of the unit specific setpoint methodology specified in the SCP to ensure instrument channel OPERABILITY between periodic testing required by the CHANNEL CALIBRATION.~~

The test is performed in accordance with the SCP. If the actual setting of the channel is found to be conservative with respect to the Allowable Value but is beyond the as-found tolerance band, the channel is OPERABLE but degraded. The degraded condition of the channel will be further evaluated during performance of the SR. This evaluation will consist of resetting the channel setpoint to the NTSP (within the allowed tolerance), and evaluating the channel response. If the channel is functioning as required and is expected to pass the next surveillance, then the channel is OPERABLE and can be restored to service at the completion of the surveillance. After the surveillance is completed, the channel as-found condition will be entered into the Corrective Action Program for further evaluation.

, except for the Function 20.a test.

5

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 39 of 138

All changes are 1 unless otherwise noted

P

BASES

SURVEILLANCE REQUIREMENTS (continued)

Stet, with changes

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3. This Surveillance is not required if it has been performed within the previous 31 days. Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the ~~[P-9]~~ interlock.

put in both places

5

7

7

SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 14). Individual component response times are not modeled in the analyses.

The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core).

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

12

----------REVIEWER'S NOTE----------
Applicable portions of the following Bases are applicable for plants adopting WCAP-13632-P-A and/or WCAP-14036-P.

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JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1 BASES, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made to the ISTS Bases that reflect the adoption of proposed Revision 4 of TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions". Three options are provided for licensees to pursue when adopting TSTF-493. Kewaunee Power Station (KPS) has elected to implement TSTF-493 via the use of a Setpoint Control Program. Under this adoption strategy, KPS relocates the Technical Specification Section 3.3, "Instrumentation," Limiting Trip Setpoints, Nominal Trip Setpoints, and/or Allowable Values from the Technical Specifications to a licensee-controlled Setpoint Control Program. The requirements for the Setpoint Control Program will be described in Chapter 5, "Administrative Controls," of the Technical Specifications.

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

5. Changes are made to reflect changes made to the Specifications.

6. Typographical error corrected.

7. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

8. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, ~~and~~ K, and N are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Condition D, E, ~~and~~ K, and N (which is Condition S in the KPS ITS).

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design. Also, the Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. Furthermore, the bracketed value and the Reviewer's Note allows options dependent upon if the plant is incorporating WCAP-14333 and WCAP-15376. Since KPS is incorporating both of the WCAPs, the correct section has been selected.

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Licensee Response/NRC Response/NRC Question Closure

Id	**2711**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**4/5/2010 2:30 PM**
Closure Statement	
Response Statement	**The previously posted markup for KAB-035 contains extra pages related to KAB-065. Please replace that markup with the attached markup.**
Question Closure Date	
Attachment 1	**KAB-035 Markup pages removed.pdf** (1MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**4/5/2010 2:36 PM**
Modified By	
Date Modified	

Table 3.3.1-1
Function

A01

LA01

A03

LA01

Applicability

TABLE TS 3.5-2

INSTRUMENT OPERATION CONDITIONS FOR REACTOR TRIP

REQUIRED

		1	2	3	4	5	6
FUNCTIONAL UNIT		NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 4 OR 4 CANNOT BE MET
17.	Reactor Trip Breaker (RTB)	2	1	2	-	The RTBs may be bypassed for up to 8 hrs. for surveillance testing or maintenance	Maintain HOT SHUTDOWN and open the RTBs
18.	(Independently Test Shunt and Undervoltage Trip Attachments)	2/bkr	1	2	-		After 72 hours maintain HOT SHUTDOWN and open the RTBs

M13 — 4

Add proposed ACTION O — L02

L02

Add proposed Required Action R.1 and associated Completion Time. — L03

Add proposed Required Action R.2 and associated Completion Time. — M08

Add proposed Applicability and ACTION C — M09

Add proposed Functions 20.a and 20.b and ACTION S — M15

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Table 3.3.1-1 Function

SR 3.3.1.1 SR 3.3.1.10 SR 3.3.1.5, SR 3.3.1.13

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

A06

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
16.e 24. Turbine First Stage Pressure	Each shift -1	Each refueling cycle -10	~~Monthly~~ -13	18 months L08
~~25. Deleted~~				See ITS 3.8.1
26. Protective System Logic Channel Testing	Not applicable	Not applicable	~~Monthly~~ -5	Includes auto load sequencer 92 days on STAGGERED TEST BASIS L09 M12
~~27. Deleted~~			Add proposed Applicability and number of Required Channels	A12
~~28. Deleted~~			Add proposed ACTION N	L14
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	See ITS 3.3.3
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	See ITS 3.7.8
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

See ITS 3.3.3

Add proposed SR 3.3.1.13 for Function 16.a

Add proposed SR 3.3.1.11 for Functions 16.a, 16.c and 16.d

Add proposed SR 3.3.1.5 for Function 16.b

M14

Add proposed SR 3.3.1.10 for Function 20.a and SR 3.3.1.15 for Functions 20.a and 20.b

M15

(Function 16.a) every 18 months. Additionally, ITS Table 3.3.1-1 requires performance of an ACTUATION LOGIC TEST (ITS SR 3.3.1.5) for the Power Range Neutron Flux, P-7 (Function 16.b). ITS SR 3.3.1.5 requires performance of an ACTUATION LOGIC TEST every 92 days on a STAGGERED TEST BASIS. ITS SR 3.3.1.11 requires performance of CHANNEL CALIBRATION in accordance with the Setpoint Control Program every 18 months. This surveillance is modified by a Note which excludes the neutron detectors from the CHANNEL CALIBRATION. ITS SR 3.3.1.13 requires performance of a COT every 18 months. This changes the CTS by requiring performance of a COT, CHANNEL CALIBRATION and an ACTUATION LOGIC TEST on the Permissive/Interlocks that was not required in the CTS.

The addition of these test is acceptable because the COT, CHANNEL CALIBRATION and ACTUATION LOGIC TEST will verify that the Permissive/Interlocks are functioning properly and will perform their required safety functions. A COT injects a signal into the channel to verify the OPERABILITY of all the devices. A CHANNEL CALIBRATION adjusts the output of the channel so that it will respond within the parameters that the channel monitors. An ACTUATION LOGIC TEST verifies that the output logic is appropriate for the input parameters. This change is designated as more restrictive because Surveillance Requirements are being added to the ITS that were not required in the CTS.

Insert M15

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table TS 3.5-2 has four columns stating various requirements for each Functional Unit. These columns are titled "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," "MINIMUM OPERABLE CHANNELS," and "MINIMUM DEGREE OF REDUNDANCY." ITS Table 3.3.1-1 does not contain the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns. This changes the CTS by moving the information provided in the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns to the Bases. Note that Discussion of Changes M01 describes the changes to the number of channels required by the LCO and Discussion of Change A03 describes the change in the title of the "MINIMUM OPERABLE CHANNELS" column.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels (which includes all of the installed channels) and the appropriate Condition to enter if a required channel is inoperable. In addition,

INSERT M15

The CTS has no specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine Trip - Turbine Stop Valve Closure reactor trips, except for a line item in CTS 2.3.a.7, which only specifies that there is a turbine trip. ITS Table 3.3.1-1 provides the requirements for these two trips (Functions 20.a and 20.b), including the number of required channels, the Applicability, an ACTION to take if a channel is inoperable (ACTION S), and Surveillance Requirements (ITS SR 3.3.1.10 and SR 3.3.1.15). This changes the CTS by adding specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine trip - Turbine Stop Valve Closure reactor trip Functions.

The Turbine Trip Functions anticipate the loss of heat removal capabilities of the secondary system following a turbine trip. While these trip Functions are not assumed in any accident or transient in the USAR, they act to minimize the pressure/temperature transient on the reactor and act as a backup trip to the Pressurizer Pressure - High reactor trip. These Functions, including the associated ACTION and Surveillance Requirements, are being added to the KPS ITS consistent with the fourth DEK response to NRC question KAB-035. In addition, the proposed ACTION (ITS 3.3.1 ACTION S) when a channel is inoperable is based upon WCAP-14333. DEK has performed an evaluation associated with the WCAP to justify the new ACTION. This change is designated as more restrictive because new requirements are being included in the ITS related to the Turbine Trip reactor trip that are not required in the CTS.

this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS Table TS 3.5-2 Notes contains Setting Limits for Permissive/Interlocks P-6, P-7, P-8, and P-10. CTS 2.3.a.1 specifies the reactor trip settings for Nuclear Flux instrumentation. CTS 2.3.a.2 specifies the reactor trip settings for the pressurizer. CTS 2.3.a.3.A specifies Reactor Coolant Temperature – Overtemperature settings. CTS 2.3.a.3.B specifies Reactor Coolant Temperature Overpower settings. CTS 2.3.a.4 specifies the Reactor Coolant Flow settings. CTS 2.3.a.5 specifies the Steam Generator settings. CTS 2.3.a.6 specifies the Reactor Trip Interlock settings. CTS 2.3.a.7 specifies other Trips which include Undervoltage trip, turbine trip, manual trip, and safety injection trip. ITS 3.3.1 does not contain Setting Limits for the RPS instrumentation. This changes the CTS by moving the Setting Limits and the reactor trip settings for Nuclear Flux instrumentation, pressurizer, Reactor Coolant Temperature, Steam Generator, Undervoltage trip, ~~turbine trip, manual trip,~~ and safety injection trip to the Setpoint Control Program.

Note that there are no Setting Limits for the Turbine Trip or the Manual Trip, thus no settings are being moved; only the line item is being deleted.

The removal of these Setting Limits is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels and the appropriate Condition to enter if a required channel is inoperable. In addition, this change is acceptable because the removed information will be adequately controlled in the Setpoint Control Program. Changes to the Setpoint Control Program are made under 10 CFR 50.59, which ensures that changes are properly evaluated. This change is designated as a less restrictive removal of detail change because Allowable Value/Setpoint Information is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Note (a) to CTS Table TS 4.1-1 Channel Description 1 (Nuclear Power Range) in the Remarks Section states that the weekly Channel Check contains a heat balance. Note (b) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the monthly CHANNEL FUNCTIONAL TEST contains the signal to ΔT and bistable action (permissive, rod stop, and trips). Note (c) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the Effective Full Power quarterly CHANNEL CALIBRATION contains upper and lower chambers for axial off-set using incore detectors. ITS 3.3.1 does not contain these requirements. This changes the CTS by moving these details to the Bases.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
S DOC M15 Move to after ACTION R on Page 3.3.1-9 ~~N.~~ One Turbine Trip channel inoperable.	~~[~~----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ----------REVIEWER'S NOTE---------- The below Note should be used for plants with installed bypass test capability. One channel may be bypassed for up to 12 hours for surveillance testing. ----------] ~~N.1~~ Place channel in trip. OR S ~~N.2~~ Reduce THERMAL POWER to < ~~[P-9]~~. 7	 72 hours 76 hours
DOC L14 ~~O.~~ One train inoperable. N	----------NOTE---------- One train may be bypassed for up to ~~[4]~~ hours for surveillance testing provided the other train is OPERABLE. ---------- ~~O.1~~ Restore train to OPERABLE status. N OR ~~O.2~~ Be in MODE 3. N	 24 hours 30 hours

10 10 9 ~~10~~ 10 5 4 2 4 4

CTS

All changes are 1 unless otherwise noted

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Table TS 3.5-2 Functional Unit 17 ~~S~~. One trip mechanism inoperable for one RTB.	~~S~~.1 Restore inoperable trip mechanism to OPERABLE status.	48 hours 4
	OR	
	~~S~~.2 Be in MODE 3.	54 hours 4

Move ACTION S here from Page 3.3.1-7

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function.

	SURVEILLANCE		FREQUENCY
Table TS 4.1-1 Channel Descriptions 1, 7, 11.a, 12, 24, DOC M10	SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
Table TS 4.1-1 Channel Description 1	SR 3.3.1.2	----------NOTE---------- Not required to be performed until ~~1~~12~~1~~ hours after THERMAL POWER is ≥ 15% RTP. --- Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculations results exceed power range channel output by more than +2% RTP.	2 24 hours

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CTS

All changes are 1 unless otherwise noted

P

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
Table TS 4.1-1 Channel Description 2.a	SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[92] days	2
Table TS 4.1-1 Channel Descriptions 5, 6, 7, 8.a, 11.a, 12 and 24 , DOC M15	SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Stet For Function 20.a, the CHANNEL CALIBRATION does not have to be performed in accordance with the Setpoint Control Program. Perform CHANNEL CALIBRATION. in accordance with the Setpoint Control Program	[18] months	10 8 5 2
DOC M10, DOC M11, DOC M14	SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION. in accordance with the Setpoint Control Program	[18] months	5 2
Table TS 4.1-1 Channel Description 4	SR 3.3.1.12	----------NOTE---------- This Surveillance shall include verification of Reactor Coolant System resistance temperature detector bypass loop flow rate. ---------- Perform CHANNEL CALIBRATION. in accordance with the Setpoint Control Program	[18] months	5 2
Table TS 4.1-1 Channel Description 1, DOC M14	SR 3.3.1.13	Perform COT.	18 months	
Table TS 4.1-3 Equipment Tests 1.b and 1.c	SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[18] months	2

CTS

All changes are 1 unless otherwise noted

P

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.15	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	7 Prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	[18] months on a STAGGERED TEST BASIS

DOC M15

Stet

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~~4~~

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CTS

All changes are 1 unless otherwise noted

P

Table 3.3.1-1 (page 3 of 7) 5
Reactor Trip Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-3 Equipment Test 1.a, DOC A11, DOC L13 11. Reactor Coolant Pump (RCP) BreakerPosition							
a. Single Loop	1[f]	1 per RCP	L	SR 3.3.1.14	NA	NA	5
b. Two Loops	1[g] (e)	1 per RCP	M	SR 3.3.1.14	NA	NA	5
Table TS 3.5-2 Functional Unit 13, Table TS 4.1-1 Channel Description 8.a 12. Undervoltage RCPs	1[e]	2 [3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [4760] V	[4830] V	3 5 7
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-1 Channel Description 8a 13. Underfrequency RCPs	1[e]	2 [3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [57.1] Hz	[57.5] Hz	3 5 7
Table TS 3.5-2 Functional Unit 12, Table TS 4.1-1 Channel Description 11a 14. Steam Generator (SG) Water Level - Low Low	1,2	3 [4 per SG]	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%	3 5 7
15. SG Water Level - Low	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%	5 7
Table TS 3.5-2 Functional Unit 16, Table TS 4.1-1 Channel Description 12 Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [42.5]% full steam flow at RTP	[40]% full steam flow at RTP	5 7
20 Stet with changes DOC M15 ~~16.~~ Turbine Trip							
a. Low Fluid Oil Pressure	1[h] e	3	N S	SR 3.3.1.10 SR 3.3.1.15	≥ [750] psig	[800] psig	10
b. Turbine Stop Valve Closure	1[h]	2	N	~~SR 3.3.1.10~~ SR 3.3.1.15	≥ [1]% open	[1]% open	

Move to after Function 19 on page 3.3.1-19

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) Interlock 4

(h) Above the P-9 (Power Range Neutron Flux) interlock. 10

----------REVIEWER'S NOTE----------
(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

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All changes are 1 unless otherwise noted

P

Table 3.3.1-1 (page 5 of 7) 5
Reactor Trip System Instrumentation
Protection

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 17, Table TS 4.1-3 Equipment Test 1.a, DOC M09	20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	2 → 1 each per RTB	R → S	SR 3.3.1.4	NA	NA	4 5
		3[b], 4[b], 5[b]	2 → 1 each per RTB	C	SR 3.3.1.4	NA	NA	4 5
Table TS 4.1-1 Channel Description 26, DOC A12, DOC L14	21. Automatic Trip Logic	1,2	2 trains	N → Ø	SR 3.3.1.5	NA	NA	4 5
	Move Function 20 here	3[b], 4[b], 5[b]	2 trains	C	SR 3.3.1.5	NA	NA	5

----------REVIEWER'S NOTE---------- 5

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

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JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

(increasing times), that could impact safety, do not normally vary such that they would not be detected during other required surveillances (e.g., CHANNEL CALIBRATIONS). Since the addition of these tests would be a major burden (plant design does not readily lend itself to such testing) with little gain in safety, ISTS SR 3.3.1.16 has not been added.

8. A Note to ISTS SR 3.3.1.10 requires the CHANNEL CALIBRATION to include verification that time constants are adjusted to the prescribed values. ITS SR 3.3.1.10 does not include this Note since it does not apply to any ITS Table 3.3.1-1 Functions that include time constants.

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, and K are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Conditions D, E, and K.

INSERT JFD 10

10. ~~ISTS Table 3.3.1-1 Function 16 (including Note h) provides the requirements for the Turbine Trip Function. This Function is not included in the KPS ITS. This Function is not assumed in any accident or transient in USAR Chapter 14. Therefore, it is not being added to the KPS ITS. This is also consistent with the current Technical Specifications, which does not include this RPS Function.~~

11. ISTS Table 3.3.1-1 Functions 17 (Reactor Trip Breakers (RTBs)) and 18 (Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms) requires performance of a TADOT (ISTS SR 3.3.1.4) every 62 days on a STAGGERED TEST BASIS. Based on KPS's review of 15376, Revision 1 ("Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times"), dated March 2003, the justification used to extend the Surveillance Test Interval from monthly on a STAGGERED TEST BASIS (i.e., each breaker tested every two months) to 62 days on a STAGGERED TEST BASIS (i.e., each breaker tested every four months) is not applicable to KPS since KPS tests the breakers monthly. Therefore, ITS SR 3.3.1.4 will contain the KPS current licensing requirement and the TADOT will be performed on a 31 day frequency.

INSERT JFD 10

Based on the fourth KPS response to NRC question KAB-035, DEK has added the Turbine Trip RPS Function into the ITS submittal. Changes to the Function requirements in ITS Table 3.3.1-1 have been made based on the KPS design. The Turbine Stop Valve Closure Function does not require a CHANNEL CALIBRATION Surveillance (ISTS SR 3.3.1.10) since the Function is a limit switch. Thus, only the TADOT Surveillance (ISTS SR 3.3.1.15) has been added. The CHANNEL CALIBRATION Surveillance for the Low Fluid Oil Pressure Function has been modified by a Note that exempts the Function from requiring the CHANNEL CALIBRATION to be performed in accordance with Setpoint Control Program, since the Function is not assumed in any accident or transient analysis in the KPS USAR. The CHANNEL CALIBRATION still has to be performed for the Function; it is just not required to be performed n accordance with the Setpoint Control Program. In addition, both the Function number in the Table and the ACTION designator have been changed to preclude unnecessary administrative burdens since this Function and its associated ACTION have been added late in the review process.

All changes are 1 unless otherwise noted

BASES

BACKGROUND (continued)

During normal operation the output from the SSPS is a voltage signal that energizes the undervoltage coils in the RTBs and bypass breakers, if in use. When the required logic matrix combination is completed, the SSPS output voltage signal is removed, the undervoltage coils are de-energized, the breaker trip lever is actuated by the de-energized undervoltage coil, and the RTBs and bypass breakers are tripped open. This allows the shutdown rods and control rods to fall into the core. In addition to the de-energization of the undervoltage coils, each breaker is also equipped with a shunt trip device that is energized to trip the breaker open upon receipt of a reactor trip signal from the SSPS. Either the undervoltage coil or the shunt trip mechanism is sufficient by itself, thus providing a diverse trip mechanism.

The decision logic matrix Functions are described in the functional diagrams included in Reference 3. In addition to the reactor trip or ESF, these diagrams also describe the various "permissive interlocks" that are associated with unit conditions. Each train has a built in testing device that can automatically test the decision logic matrix Functions and the actuation devices while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The RTS functions to maintain the SLs during all AOOs and mitigates the consequences of DBAs in all MODES in which the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

INSERT 3

Each of the analyzed accidents and transients can be detected by one or more RTS Functions. The accident analysis described in Reference 4 takes credit for most RTS trip Functions. RTS trip Functions not specifically credited in the accident analysis are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RTS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RTS trip Functions that were credited in the accident analysis.

The LCO requires all instrumentation performing an RTS Function, listed in Table 3.3.1-1 ~~in the accompanying LCO,~~ to be OPERABLE. A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its

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All changes are 1 unless otherwise noted

P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 and by the RHR System in MODE 4, 5, or 6. The MFW System is in operation only in MODE 1 or 2 and, therefore, this trip Function need only be OPERABLE in these MODES.

Stet with changes

20

~~16~~. Turbine Trip

Move to after Function 19 on Page B 3.3.1-33

a. Turbine Trip - Low Fluid Oil Pressure

The Turbine Trip - Low Fluid Oil Pressure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip Function acts to minimize the pressure/temperature transient on the reactor. Any turbine trip from a power level below the P-~~9~~ setpoint, 7 10 approximately ~~50~~% power, will not actuate a reactor trip. Three pressure switches monitor the control oil pressure in the Turbine Electrohydraulic Control System. A low pressure condition sensed by two-out-of-three pressure switches will actuate a reactor trip. These pressure switches do not provide any input to the control system. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function and RCS integrity is ensured by the pressurizer safety valves. ~~5~~

The LCO requires three channels of Turbine Trip - Low Fluid Oil Pressure to be OPERABLE in MODE 1 above P-~~9~~. 7

Below the P-~~9~~ setpoint, a turbine trip does not actuate a reactor trip. In MODE 2, 3, 4, 5, or 6, there is no potential for a turbine trip, and the Turbine Trip - Low Fluid Oil Pressure trip Function does not need to be OPERABLE.

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P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Stet with changes

Move to after Function 19 on Page B 3.3.1-33

b. Turbine Trip - Turbine Stop Valve Closure

The Turbine Trip - Turbine Stop Valve Closure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip from a power level below the P-9 setpoint, approximately 50% power. This action will not actuate a reactor trip. The trip Function anticipates the loss of secondary heat removal capability that occurs when the stop valves close. Tripping the reactor in anticipation of loss of secondary heat removal acts to minimize the pressure and temperature transient on the reactor. This trip Function will not and is not required to operate in the presence of a single channel failure. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function, and RCS integrity is ensured by the pressurizer safety valves. This trip Function is diverse to the Turbine Trip - Low Fluid Oil Pressure trip Function. Each turbine stop valve is equipped with one limit switch that inputs to the RTS. If all four limit switches indicate that the stop valves are all closed, a reactor trip is initiated.

10 7 both 5

The LSSS for this Function is set to assure channel trip occurs when the associated stop valve is completely closed.

two

The LCO requires four Turbine Trip - Turbine Stop Valve Closure channels, one per valve, to be OPERABLE in MODE 1 above P-9. All four channels must trip to cause reactor trip.

7 Both

Below the P-9 setpoint, a load rejection can be accommodated by the Steam Dump System. In MODE 2, 3, 4, 5, or 6, there is no potential for a load rejection, and the Turbine Trip - Stop Valve Closure trip Function does not need to be OPERABLE.

17. Safety Injection Input from Engineered Safety Feature Actuation System

The SI Input from ESFAS ensures that if a reactor trip has not already been generated by the RTS, the ESFAS automatic actuation logic will initiate a reactor trip upon any signal that initiates SI. This is a condition of acceptability for the LOCA. However, other transients

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCPs Breaker Open (Two Loops); 3
- 3
- Undervoltage RCPs; and
- Underfrequency RCPs.

; Turbine Trip - Low Fluid Oil Pressure; and Turbine trip - Turbine Stop Valve Closure.

or, in the case of the Turbine Trip Functions, provide a backup reactor trip during a loss of load event

These reactor trips are only required when operating above the P-7 setpoint (approximately 10% power). The reactor trips provide protection against violating the DNBR limit. Below the P-7 setpoint, the RCS is capable of providing sufficient natural circulation without any RCP running.

(2) on decreasing power, the P-7 interlock automatically blocks reactor trips on the following Functions:

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCP Breaker Position (Two Loops); 3
- Undervoltage RCPs; and 3
- Underfrequency RCPs.

Trip Setpoint and Allowable Value are not applicable to the P-7 interlock because it is a logic Function and thus has no parameter with which to associate an LSSS.

The P-7 interlock is a logic Function with train and not channel identity. Therefore, the LCO requires one channel per train of Low Power Reactor Trips Block, P-7 interlock to be OPERABLE in MODE 1.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms

The LCO requires both the Undervoltage and Shunt Trip Mechanisms to be OPERABLE for each RTB that is in service. The trip mechanisms are not required to be OPERABLE for trip breakers that are open, racked out, incapable of supplying power to the Rod Control System, or declared inoperable under Function 19 above. OPERABILITY of both trip mechanisms on each breaker ensures that no single trip mechanism failure will prevent opening any breaker on a valid signal.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

21. Automatic Trip Logic

The LCO requirement for the RTBs (Functions 19 and 20) and Automatic Trip Logic (Function 21) ensures that means are provided to interrupt the power to allow the rods to fall into the reactor core. Each RTB is equipped with an undervoltage coil and a shunt trip coil to trip the breaker open when needed. Each RTB is equipped with a bypass breaker to allow testing of the trip breaker while the unit is at power. The reactor trip signals generated by the RTS Automatic Trip Logic cause the RTBs and associated bypass breakers to open and shut down the reactor.

The LCO requires two trains of RTS Automatic Trip Logic to be OPERABLE. Having two OPERABLE channels ensures that random failure of a single logic channel will not prevent reactor trip.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

Move Function 20 here from pages B 3.3.1-25 and B 3.3.1-26

The RTS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

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All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

status and the 4 additional hours allowed to reduce THERMAL POWER to below the P-8 setpoint are justified in Reference 11. 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 4 4 10

M.1 and M.2

Condition M applies to the RCP Breaker Position (Two Loops) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be placed in trip within [6] hours. If the channel cannot be placed in trip within the [6] hours, then THERMAL POWER must be reduced below the P-7 setpoint within the next 6 hours. 4

This places the unit in a MODE where the LCO is no longer applicable. This Function does not have to be OPERABLE below the P-7 setpoint because other RTS Functions provide core protection below the P-7 setpoint. The [6] hours allowed to place the channel in trip and the 6 additional hours allowed to reduce THERMAL POWER to below the P-7 setpoint are justified in Reference 11. 4 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 4 4 10

Stet with changes

N.1 and N.2

Condition N applies to Turbine Trip on Low Fluid Oil Pressure or on Turbine Stop Valve Closure. With one channel inoperable, the inoperable channel must be placed in the trip condition within 72 hours. If placed in the tripped condition, this results in a partial trip condition requiring only one additional channel to initiate a reactor trip. If the channel cannot be restored to OPERABLE status or placed in the trip condition, then power must be reduced below the P-9 setpoint within the next 4 hours. The 72 hours allowed to place the inoperable channel in the tripped condition is justified in Reference 8. Four hours is allowed for reducing power. 7

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48 5

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BASES

ACTIONS (continued)

Stet with changes

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

[The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of the other channels. The 12 hour time limit is justified in Reference 8.]

----------REVIEWER'S NOTE----------
The below text should be used for plants with installed bypass test capability:

The Required Actions are modified by a Note that allows placing one channel in bypass for up to 12 hours while performing routine surveillance testing. The 12 hour time limit is justified in Reference 8.

Ø.1 and Ø.2

Condition Ø applies to the SI Input from ESFAS reactor trip and the RTS Automatic Trip Logic in MODES 1 and 2. These actions address the train orientation of the RTS for these Functions. With one train inoperable, 24 hours are allowed to restore the train to OPERABLE status (Required Action Ø.1) or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of 24 hours (Required Action Ø.1) is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The 24 hours allowed to restore the inoperable RTS Automatic Trip Logic train to OPERABLE status is justified in Reference 8. The Completion Time of 6 hours (Required Action Ø.2) is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems.

The Required Actions have been modified by a Note that allows bypassing one train up to [4] hours for surveillance testing, provided the other train is OPERABLE. [The [4] hour time limit for testing the RTS Automatic Trip logic train may include testing the RTB also, if both the Logic test and RTB test are conducted within the [4] hour time limit. The [4] hour time limit is justified in Reference 8.]

----------REVIEWER'S NOTE----------
The below text should replace the bracketed information in the previous paragraph if WCAP-14333 and WCAP-15376 are being incorporated:

The [4] hour time limit for the RTS Automatic Trip Logic train testing is greater than the 2 hour time limit for the RTBs, which the logic train

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

S.1 and S.2 (5)

Condition S applies to the RTB Undervoltage and Shunt Trip Mechanisms, or diverse trip features, in MODES 1 and 2. With one of the diverse trip features inoperable, it must be restored to an OPERABLE status within 48 hours or the unit must be placed in a MODE where the requirement does not apply. This is accomplished by placing the unit in MODE 3 within the next 6 hours (54 hours total time). The Completion Time of 6 hours is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. With the unit in MODE 3, ACTION C would apply to any inoperable RTB trip mechanism. The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition P. (5) (14)

The Completion Time of 48 hours for Required Action S.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval. (5)

Move ACTIONS S.1 and S.2 on page B 3.3.1-43 here

SURVEILLANCE REQUIREMENTS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval. (7)

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KAB 065 page changes are in green or outlined in green. The changes for this change are in red and outlined in red.

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~~in accordance with the assumptions of the unit specific setpoint methodology specified in the SCP to ensure instrument channel OPERABILITY between periodic testing required by the CHANNEL CALIBRATION.~~

The test is performed in accordance with the SCP. If the actual setting of the channel is found to be conservative with respect to the Allowable Value but is beyond the as-found tolerance band, the channel is OPERABLE but degraded. The degraded condition of the channel will be further evaluated during performance of the SR. This evaluation will consist of resetting the channel setpoint to the NTSP (within the allowed tolerance), and evaluating the channel response. If the channel is functioning as required and is expected to pass the next surveillance, then the channel is OPERABLE and can be restored to service at the completion of the surveillance. After the surveillance is completed, the channel as-found condition will be entered into the Corrective Action Program for further evaluation.

, except for the Function 20.a test.

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All changes are 1 unless otherwise noted

P

BASES

SURVEILLANCE REQUIREMENTS (continued)

Stet, with changes

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3. This Surveillance is not required if it has been performed within the previous 31 days. Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the ~~[P-9]~~ interlock.

put in both places

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SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 14). Individual component response times are not modeled in the analyses.

The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core).

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

12

----------REVIEWER'S NOTE----------
Applicable portions of the following Bases are applicable for plants adopting WCAP-13632-P-A and/or WCAP-14036-P.

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Attachment 1, Volume 8, Rev. 0, Page 141 of 517

JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1 BASES, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made to the ISTS Bases that reflect the adoption of proposed Revision 4 of TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions". Three options are provided for licensees to pursue when adopting TSTF-493. Kewaunee Power Station (KPS) has elected to implement TSTF-493 via the use of a Setpoint Control Program. Under this adoption strategy, KPS relocates the Technical Specification Section 3.3, "Instrumentation," Limiting Trip Setpoints, Nominal Trip Setpoints, and/or Allowable Values from the Technical Specifications to a licensee-controlled Setpoint Control Program. The requirements for the Setpoint Control Program will be described in Chapter 5, "Administrative Controls," of the Technical Specifications.

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

5. Changes are made to reflect changes made to the Specifications.

6. Typographical error corrected.

7. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

8. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, ~~and~~ K, and N are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Condition D, E, ~~and~~ K, and N (which is Condition S in the KPS ITS).

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design. Also, the Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. Furthermore, the bracketed value and the Reviewer's Note allows options dependent upon if the plant is incorporating WCAP-14333 and WCAP-15376. Since KPS is incorporating both of the WCAPs, the correct section has been selected.

Licensee Response/NRC Response/NRC Question Closure

Id	**2911**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**5/11/2010 2:05 PM**
Closure Statement	
Response Statement	**Based on a recent phone call, KPS is modifying the markup previously submitted. A draft markup regarding this change is attached and supersedes the previously submitted markup. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**KAB-035 Markup (alt).pdf** (1MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Victor Cusumano** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/11/2010 2:09 PM**
Modified By	
Date Modified	

A01

Table 3.3.1-1
Function

LA01

A03

LA01

Applicability

TABLE TS 3.5-2

INSTRUMENT OPERATION CONDITIONS FOR REACTOR TRIP

REQUIRED

		1	2	3	4	5	6
NO.	FUNCTIONAL UNIT	NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 4 OR 4 CANNOT BE MET
17.	Reactor Trip Breaker (RTB)	2	1	2	-	The RTBs may be bypassed for up to 8 hrs. for surveillance testing or maintenance	Maintain HOT SHUTDOWN and open the RTBs
18.	(Independently Test Shunt and Undervoltage Trip Attachments)	2/bkr	1	2	-		After 72 hours maintain HOT SHUTDOWN and open the RTBs

M13 4

Add proposed ACTION O L02

L02

Add proposed Required Action R.1 and associated Completion Time. L03

Add proposed Required Action R.2 and associated Completion Time. M08

Add proposed Applicability and ACTION C M09

Add proposed Functions 20.a and 20.b and ACTION S M15

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Table 3.3.1-1
Function

SR 3.3.1.1 SR 3.3.1.10 SR 3.3.1.5, SR 3.3.1.13

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

A06

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
16.e 24. Turbine First Stage Pressure	Each shift -1	Each refueling cycle -10	Monthly -13	18 months L08
25. Deleted				See ITS 3.8.1
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly -5	Includes auto load sequencer 92 days on STAGGERED TEST BASIS L09 M12
27. Deleted			Add proposed Applicability and number of Required Channels	A12
28. Deleted			Add proposed ACTION N	L14
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	See ITS 3.3.3
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	See ITS 3.7.8
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

See ITS 3.3.3

Add proposed SR 3.3.1.13 for Function 16.a

Add proposed SR 3.3.1.11 for Functions 16.a, 16.c and 16.d

Add proposed SR 3.3.1.5 for Function 16.b

M14

Add proposed SR 3.3.1.10 for Function 20.a and SR 3.3.1.15 for Functions 20.a and 20.b

M15

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(Function 16.a) every 18 months. Additionally, ITS Table 3.3.1-1 requires performance of an ACTUATION LOGIC TEST (ITS SR 3.3.1.5) for the Power Range Neutron Flux, P-7 (Function 16.b). ITS SR 3.3.1.5 requires performance of an ACTUATION LOGIC TEST every 92 days on a STAGGERED TEST BASIS. ITS SR 3.3.1.11 requires performance of CHANNEL CALIBRATION in accordance with the Setpoint Control Program every 18 months. This surveillance is modified by a Note which excludes the neutron detectors from the CHANNEL CALIBRATION. ITS SR 3.3.1.13 requires performance of a COT every 18 months. This changes the CTS by requiring performance of a COT, CHANNEL CALIBRATION and an ACTUATION LOGIC TEST on the Permissive/Interlocks that was not required in the CTS.

The addition of these test is acceptable because the COT, CHANNEL CALIBRATION and ACTUATION LOGIC TEST will verify that the Permissive/Interlocks are functioning properly and will perform their required safety functions. A COT injects a signal into the channel to verify the OPERABILITY of all the devices. A CHANNEL CALIBRATION adjusts the output of the channel so that it will respond within the parameters that the channel monitors. An ACTUATION LOGIC TEST verifies that the output logic is appropriate for the input parameters. This change is designated as more restrictive because Surveillance Requirements are being added to the ITS that were not required in the CTS.

Insert M15

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table TS 3.5-2 has four columns stating various requirements for each Functional Unit. These columns are titled "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," "MINIMUM OPERABLE CHANNELS," and "MINIMUM DEGREE OF REDUNDANCY." ITS Table 3.3.1-1 does not contain the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns. This changes the CTS by moving the information provided in the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns to the Bases. Note that Discussion of Changes M01 describes the changes to the number of channels required by the LCO and Discussion of Change A03 describes the change in the title of the "MINIMUM OPERABLE CHANNELS" column.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels (which includes all of the installed channels) and the appropriate Condition to enter if a required channel is inoperable. In addition,

INSERT M15

The CTS has no specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine Trip - Turbine Stop Valve Closure reactor trips, except for a line item in CTS 2.3.a.7, which only specifies that there is a turbine trip. ITS Table 3.3.1-1 provides the requirements for these two trips (Functions 20.a and 20.b), including the number of required channels, the Applicability, an ACTION to take if a channel is inoperable (ACTION S), and Surveillance Requirements (ITS SR 3.3.1.10 and SR 3.3.1.15). This changes the CTS by adding specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine trip - Turbine Stop Valve Closure reactor trip Functions.

The Turbine Trip Functions anticipate the loss of heat removal capabilities of the secondary system following a turbine trip. While these trip Functions are not assumed in any accident or transient in the USAR, they act to minimize the pressure/temperature transient on the reactor and act as a backup trip to the Pressurizer Pressure - High reactor trip. These Functions, including the associated ACTION and Surveillance Requirements, are being added to the KPS ITS consistent with the fourth DEK response to NRC question KAB-035. In addition, the proposed ACTION (ITS 3.3.1 ACTION S) when a channel is inoperable is based upon WCAP-14333. DEK has performed an evaluation associated with the WCAP to justify the new ACTION. This change is designated as more restrictive because new requirements are being included in the ITS related to the Turbine Trip reactor trip that are not required in the CTS.

this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS Table TS 3.5-2 Notes contains Setting Limits for Permissive/Interlocks P-6, P-7, P-8, and P-10. CTS 2.3.a.1 specifies the reactor trip settings for Nuclear Flux instrumentation. CTS 2.3.a.2 specifies the reactor trip settings for the pressurizer. CTS 2.3.a.3.A specifies Reactor Coolant Temperature – Overtemperature settings. CTS 2.3.a.3.B specifies Reactor Coolant Temperature Overpower settings. CTS 2.3.a.4 specifies the Reactor Coolant Flow settings. CTS 2.3.a.5 specifies the Steam Generator settings. CTS 2.3.a.6 specifies the Reactor Trip Interlock settings. CTS 2.3.a.7 specifies other Trips which include Undervoltage trip, turbine trip, manual trip, and safety injection trip. ITS 3.3.1 does not contain Setting Limits for the RPS instrumentation. This changes the CTS by moving the Setting Limits and the reactor trip settings for Nuclear Flux instrumentation, pressurizer, Reactor Coolant Temperature, Steam Generator, Undervoltage trip, ~~turbine trip, manual trip,~~ and safety injection trip to the Setpoint Control Program.

Note that there are no Setting Limits for the Turbine Trip or the Manual Trip, thus no settings are being moved; only the line item is being deleted.

The removal of these Setting Limits is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels and the appropriate Condition to enter if a required channel is inoperable. In addition, this change is acceptable because the removed information will be adequately controlled in the Setpoint Control Program. Changes to the Setpoint Control Program are made under 10 CFR 50.59, which ensures that changes are properly evaluated. This change is designated as a less restrictive removal of detail change because Allowable Value/Setpoint Information is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Note (a) to CTS Table TS 4.1-1 Channel Description 1 (Nuclear Power Range) in the Remarks Section states that the weekly Channel Check contains a heat balance. Note (b) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the monthly CHANNEL FUNCTIONAL TEST contains the signal to ΔT and bistable action (permissive, rod stop, and trips). Note (c) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the Effective Full Power quarterly CHANNEL CALIBRATION contains upper and lower chambers for axial off-set using incore detectors. ITS 3.3.1 does not contain these requirements. This changes the CTS by moving these details to the Bases.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
S DOC M15 Move to after ACTION R on Page 3.3.1-9 ~~N.~~ One Turbine Trip channel inoperable.	~~[~~----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ~~----------REVIEWER'S NOTE----------~~ ~~The below Note should be used for plants with installed bypass test capability.~~ ~~One channel may be bypassed for up to 12 hours for surveillance testing.~~ ~~----------]~~	
	~~N.1~~ Place channel in trip. OR ~~N.2~~ Reduce THERMAL POWER to < ~~[P-9]~~.	72 hours 76 hours
DOC L14 ~~O.~~ One train inoperable. N	----------NOTE---------- One train may be bypassed for up to ~~[4]~~ hours for surveillance testing provided the other train is OPERABLE. ---------- ~~O.1~~ Restore train to OPERABLE status. OR ~~O.2~~ Be in MODE 3.	 24 hours 30 hours

10 9 ~~10~~ 10 5 7 4 2 4 4 N N

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Table TS 3.5-2 Functional Unit 17 — S. One trip mechanism inoperable for one RTB. (R)	S.1 (R) Restore inoperable trip mechanism to OPERABLE status.	48 hours (4)
	OR	
	S.2 (R) Be in MODE 3.	54 hours (4)

Move ACTION S here from Page 3.3.1-7

SURVEILLANCE REQUIREMENTS

----------NOTE----------

Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function. (P)

	SURVEILLANCE		FREQUENCY
Table TS 4.1-1 Channel Descriptions 1, 7, 11.a, 12, 24, DOC M10	SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
Table TS 4.1-1 Channel Description 1	SR 3.3.1.2	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER is ≥ 15% RTP. ---------- (2)	
		Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculations results exceed power range channel output by more than +2% RTP.	24 hours

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CTS

All changes are 1 unless otherwise noted

P

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
Table TS 4.1-1 Channel Description 2.a	SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[92] days	2
Table TS 4.1-1 Channel Descriptions 5, 6, 7, 8.a, 11.a, 12 and 24, DOC M15	SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	8, 5, 2
DOC M10, DOC M11, DOC M14	SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	5, 2
Table TS 4.1-1 Channel Description 4	SR 3.3.1.12	----------NOTE---------- This Surveillance shall include verification of Reactor Coolant System resistance temperature detector bypass loop flow rate. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	5, 2
Table TS 4.1-1 Channel Description 1, DOC M14	SR 3.3.1.13	Perform COT.	18 months	
Table TS 4.1-3 Equipment Tests 1.b and 1.c	SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[18] months	2

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CTS

All changes are 1 unless otherwise noted

P

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.15	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	7 Prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	[18] months on a STAGGERED TEST BASIS

DOC M15

Stet

2

~~4~~

7

CTS

All changes are 1 unless otherwise noted

Table 3.3.1-1 (page 3 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-3 Equipment Test 1.a, DOC A11, DOC L13 — 11. Reactor Coolant Pump (RCP) BreakerPosition						
a. Single Loop	1[f]	1 per RCP	L	SR 3.3.1.14	NA	NA
b. Two Loops	1[g]	1 per RCP	M	SR 3.3.1.14	NA	NA
Table TS 3.5-2 Functional Unit 13, Table TS 4.1-1 Channel Description 8.a — 12. Undervoltage RCPs	1[e]	[3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [4760] V	[4830] V
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-1 Channel Description 8a — 13. Underfrequency RCPs	1[e]	[3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [57.1] Hz	[57.5] Hz
Table TS 3.5-2 Functional Unit 12, Table TS 4.1-1 Channel Description 11a — 14. Steam Generator (SG) Water Level - Low Low	1,2	[4 per SG]	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
15. SG Water Level - Low	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
Table TS 3.5-2 Functional Unit 16, Table TS 4.1-1 Channel Description 12 — Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [42.5]% full steam flow at RTP	[40]% full steam flow at RTP
~~16.~~ 20 Turbine Trip						
a. Low Fluid Oil Pressure	1[h]	3	N	SR 3.3.1.10 SR 3.3.1.15	≥ [750] psig	[800] psig
b. Turbine Stop Valve Closure	1[h]	4	N	~~SR 3.3.1.10~~ SR 3.3.1.15	≥ [1]% open	[1]% open

Stet with changes

DOC M15

Move to after Function 19 on page 3.3.1-19

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) Interlock

(h) Above the P-9 (Power Range Neutron Flux) interlock.

REVIEWER'S NOTE

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

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CTS

All changes are 1 unless otherwise noted

P

Table 3.3.1-1 (page 5 of 7) 5
Reactor Trip System Instrumentation
Protection

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 17, Table TS 4.1-3 Equipment Test 1.a, DOC M09	20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms (18)	1,2	2 → 1 each per RTB	R → S	SR 3.3.1.4	NA	NA	4 5
		3[b], 4[b], 5[b]	2 → 1 each per RTB	C	SR 3.3.1.4	NA	NA	4 5
Table TS 4.1-1 Channel Description 26, DOC A12, DOC L14	21. Automatic Trip Logic (19)	1,2	2 trains	N → Ø	SR 3.3.1.5	NA	NA	4 5
	Move Function 20 here	3[b], 4[b], 5[b]	2 trains	C	SR 3.3.1.5	NA	NA	5

----------REVIEWER'S NOTE---------- 5

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

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JUSTIFICATION FOR DEVIATIONS
ITS 3.3.1, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

(increasing times), that could impact safety, do not normally vary such that they would not be detected during other required surveillances (e.g., CHANNEL CALIBRATIONS). Since the addition of these tests would be a major burden (plant design does not readily lend itself to such testing) with little gain in safety, ISTS SR 3.3.1.16 has not been added.

8. A Note to ISTS SR 3.3.1.10 requires the CHANNEL CALIBRATION to include verification that time constants are adjusted to the prescribed values. ITS SR 3.3.1.10 does not include this Note since it does not apply to any ITS Table 3.3.1-1 Functions that include time constants.

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, and K are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Conditions D, E, and K.

INSERT JFD 10

10. ~~ISTS Table 3.3.1-1 Function 16 (including Note h) provides the requirements for the Turbine Trip Function. This Function is not included in the KPS ITS. This Function is not assumed in any accident or transient in USAR Chapter 14. Therefore, it is not being added to the KPS ITS. This is also consistent with the current Technical Specifications, which does not include this RPS Function.~~

11. ISTS Table 3.3.1-1 Functions 17 (Reactor Trip Breakers (RTBs)) and 18 (Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms) requires performance of a TADOT (ISTS SR 3.3.1.4) every 62 days on a STAGGERED TEST BASIS. Based on KPS's review of 15376, Revision 1 ("Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times"), dated March 2003, the justification used to extend the Surveillance Test Interval from monthly on a STAGGERED TEST BASIS (i.e., each breaker tested every two months) to 62 days on a STAGGERED TEST BASIS (i.e., each breaker tested every four months) is not applicable to KPS since KPS tests the breakers monthly. Therefore, ITS SR 3.3.1.4 will contain the KPS current licensing requirement and the TADOT will be performed on a 31 day frequency.

INSERT JFD 10

Based on the fourth KPS response to NRC question KAB-035, DEK has added the Turbine Trip RPS Function into the ITS submittal. Changes to the Function requirements in ITS Table 3.3.1-1 have been made based on the KPS design. The Turbine Stop Valve Closure Function does not require a CHANNEL CALIBRATION Surveillance (ISTS SR 3.3.1.10) since the Function is a limit switch. Thus, only the TADOT Surveillance (ISTS SR 3.3.1.15) has been added. In addition, both the Function number in the Table and the ACTION designator have been changed to preclude unnecessary administrative burdens since this Function and its associated ACTION have been added late in the review process.

All changes are 1 unless otherwise noted

BASES

BACKGROUND (continued)

During normal operation the output from the SSPS is a voltage signal that energizes the undervoltage coils in the RTBs and bypass breakers, if in use. When the required logic matrix combination is completed, the SSPS output voltage signal is removed, the undervoltage coils are de-energized, the breaker trip lever is actuated by the de-energized undervoltage coil, and the RTBs and bypass breakers are tripped open. This allows the shutdown rods and control rods to fall into the core. In addition to the de-energization of the undervoltage coils, each breaker is also equipped with a shunt trip device that is energized to trip the breaker open upon receipt of a reactor trip signal from the SSPS. Either the undervoltage coil or the shunt trip mechanism is sufficient by itself, thus providing a diverse trip mechanism.

The decision logic matrix Functions are described in the functional diagrams included in Reference 3. In addition to the reactor trip or ESF, these diagrams also describe the various "permissive interlocks" that are associated with unit conditions. Each train has a built in testing device that can automatically test the decision logic matrix Functions and the actuation devices while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The RTS functions to maintain the SLs during all AOOs and mitigates the consequences of DBAs in all MODES in which the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

INSERT 3

Each of the analyzed accidents and transients can be detected by one or more RTS Functions. The accident analysis described in Reference 4 takes credit for most RTS trip Functions. RTS trip Functions not specifically credited in the accident analysis are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RTS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RTS trip Functions that were credited in the accident analysis.

The LCO requires all instrumentation performing an RTS Function, listed in Table 3.3.1-1 ~~in the accompanying LCO,~~ to be OPERABLE. A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its

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All changes are 1 unless otherwise noted

P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 and by the RHR System in MODE 4, 5, or 6. The MFW System is in operation only in MODE 1 or 2 and, therefore, this trip Function need only be OPERABLE in these MODES.

Stet with changes

20

~~16~~. Turbine Trip

Move to after Function 19 on Page B 3.3.1-33

a. Turbine Trip - Low Fluid Oil Pressure

The Turbine Trip - Low Fluid Oil Pressure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip Function acts to minimize the pressure/temperature transient on the reactor. Any turbine trip from a power level below the P-~~9~~ setpoint, 7 10 approximately ~~50~~% power, will not actuate a reactor trip. Three pressure switches monitor the control oil pressure in the Turbine Electrohydraulic Control System. A low pressure condition sensed by two-out-of-three pressure switches will actuate a reactor trip. These pressure switches do not provide any input to the control system. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function and RCS integrity is ensured by the pressurizer safety valves. ~~5~~

The LCO requires three channels of Turbine Trip - Low Fluid Oil Pressure to be OPERABLE in MODE 1 above P-~~9~~. 7

Below the P-~~9~~ setpoint, a turbine trip does not actuate a reactor trip. In MODE 2, 3, 4, 5, or 6, there is no potential for a turbine trip, and the Turbine Trip - Low Fluid Oil Pressure trip Function does not need to be OPERABLE.

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P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Stet with changes

Move to after Function 19 on Page B 3.3.1-33

b. Turbine Trip - Turbine Stop Valve Closure

The Turbine Trip - Turbine Stop Valve Closure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip from a power level below the P-9 setpoint, approximately 50% power. This action will not actuate a reactor trip. The trip Function anticipates the loss of secondary heat removal capability that occurs when the stop valves close. Tripping the reactor in anticipation of loss of secondary heat removal acts to minimize the pressure and temperature transient on the reactor. This trip Function will not and is not required to operate in the presence of a single channel failure. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function, and RCS integrity is ensured by the pressurizer safety valves. This trip Function is diverse to the Turbine Trip - Low Fluid Oil Pressure trip Function. Each turbine stop valve is equipped with one limit switch that inputs to the RTS. If all four limit switches indicate that the stop valves are all closed, a reactor trip is initiated.

10 7 both 5

The LSSS for this Function is set to assure channel trip occurs when the associated stop valve is completely closed.

two

The LCO requires four Turbine Trip - Turbine Stop Valve Closure channels, one per valve, to be OPERABLE in MODE 1 above P-9. All four channels must trip to cause reactor trip.

7 Both

Below the P-9 setpoint, a load rejection can be accommodated by the Steam Dump System. In MODE 2, 3, 4, 5, or 6, there is no potential for a load rejection, and the Turbine Trip - Stop Valve Closure trip Function does not need to be OPERABLE.

17. Safety Injection Input from Engineered Safety Feature Actuation System

The SI Input from ESFAS ensures that if a reactor trip has not already been generated by the RTS, the ESFAS automatic actuation logic will initiate a reactor trip upon any signal that initiates SI. This is a condition of acceptability for the LOCA. However, other transients

5

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCPs Breaker Open (Two Loops); 3
- 3
- Undervoltage RCPs; ~~and~~
- Underfrequency RCPs.

; Turbine Trip - Low Fluid Oil Pressure; and Turbine trip - Turbine Stop Valve Closure.

or, in the case of the Turbine Trip Functions, provide a backup reactor trip during a loss of load event

These reactor trips are only required when operating above the P-7 setpoint (approximately 10% power). The reactor trips provide protection against violating the DNBR limit. Below the P-7 setpoint, the RCS is capable of providing sufficient natural circulation without any RCP running.

(2) on decreasing power, the P-7 interlock automatically blocks reactor trips on the following Functions:

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCP Breaker Position (Two Loops); 3
- Undervoltage RCPs; ~~and~~ 3
- Underfrequency RCPs.

Trip Setpoint and Allowable Value are not applicable to the P-7 interlock because it is a logic Function and thus has no parameter with which to associate an LSSS.

The P-7 interlock is a logic Function with train and not channel identity. Therefore, the LCO requires one channel per train of Low Power Reactor Trips Block, P-7 interlock to be OPERABLE in MODE 1.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms

The LCO requires both the Undervoltage and Shunt Trip Mechanisms to be OPERABLE for each RTB that is in service. The trip mechanisms are not required to be OPERABLE for trip breakers that are open, racked out, incapable of supplying power to the Rod Control System, or declared inoperable under Function 19 above. OPERABILITY of both trip mechanisms on each breaker ensures that no single trip mechanism failure will prevent opening any breaker on a valid signal.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

21. Automatic Trip Logic

The LCO requirement for the RTBs (Functions 19 and 20) and Automatic Trip Logic (Function 21) ensures that means are provided to interrupt the power to allow the rods to fall into the reactor core. Each RTB is equipped with an undervoltage coil and a shunt trip coil to trip the breaker open when needed. Each RTB is equipped with a bypass breaker to allow testing of the trip breaker while the unit is at power. The reactor trip signals generated by the RTS Automatic Trip Logic cause the RTBs and associated bypass breakers to open and shut down the reactor.

The LCO requires two trains of RTS Automatic Trip Logic to be OPERABLE. Having two OPERABLE channels ensures that random failure of a single logic channel will not prevent reactor trip.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

Move Function 20 here from pages B 3.3.1-25 and B 3.3.1-26

The RTS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

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BASES

ACTIONS (continued)

status and the 4 additional hours allowed to reduce THERMAL POWER to below the P-8 setpoint are justified in Reference 11. 8 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

M.1 and M.2

Condition M applies to the RCP Breaker Position (Two Loops) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be placed in trip within [6] hours. If the channel cannot be placed in trip within the [6] hours, then THERMAL POWER must be reduced below the P-7 setpoint within the next 6 hours. 4

This places the unit in a MODE where the LCO is no longer applicable. This Function does not have to be OPERABLE below the P-7 setpoint because other RTS Functions provide core protection below the P-7 setpoint. The [6] hours allowed to place the channel in trip and the 6 additional hours allowed to reduce THERMAL POWER to below the P-7 setpoint are justified in Reference 11. P 8 4 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

Stet with changes

S

~~N.1 and N.2~~

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

~~Condition N applies to Turbine Trip on Low Fluid Oil Pressure or on Turbine Stop Valve Closure. With one channel inoperable, the inoperable channel must be placed in the trip condition within 72 hours. If placed in the tripped condition, this results in a partial trip condition requiring only one additional channel to initiate a reactor trip. If the channel cannot be restored to OPERABLE status or placed in the trip condition, then power must be reduced below the P-9 setpoint within the next 4 hours. The 72 hours allowed to place the inoperable channel in the tripped condition is justified in Reference 8. Four hours is allowed for reducing power.~~ 7 5

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

Stet with changes

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

[The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of the other channels. The 12 hour time limit is justified in Reference 8.] 8

8

----------REVIEWER'S NOTE----------
The below text should be used for plants with installed bypass test capability:

The Required Actions are modified by a Note that allows placing one channel in bypass for up to 12 hours while performing routine surveillance testing. The 12 hour time limit is justified in Reference 8.
---------- 5 8

N

Ø.1 and Ø.2 5

N P

Condition Ø applies to the SI Input from ESFAS reactor trip and the RTS Automatic Trip Logic in MODES 1 and 2. These actions address the train orientation of the RTS for these Functions. With one train inoperable, 24 hours are allowed to restore the train to OPERABLE status (Required Action Ø.1) or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of 24 hours (Required Action Ø.1) is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The 24 hours allowed to restore the inoperable RTS Automatic Trip Logic train to OPERABLE status is justified in Reference 8. The Completion Time of 6 hours (Required Action Ø.2) is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. 5 5 5 5 5

The Required Actions have been modified by a Note that allows bypassing one train up to [4] hours for surveillance testing, provided the other train is OPERABLE. [The [4] hour time limit for testing the RTS Automatic Trip logic train may include testing the RTB also, if both the Logic test and RTB test are conducted within the [4] hour time limit. The [4] hour time limit is justified in Reference 8.] 5 8

----------REVIEWER'S NOTE----------
The below text should replace the bracketed information in the previous paragraph if WCAP-14333 and WCAP-15376 are being incorporated:

The [4] hour time limit for the RTS Automatic Trip Logic train testing is greater than the 2 hour time limit for the RTBs, which the logic train 8

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

S.1 and S.2 (5)

Condition S applies to the RTB Undervoltage and Shunt Trip Mechanisms, or diverse trip features, in MODES 1 and 2. With one of the diverse trip features inoperable, it must be restored to an OPERABLE status within 48 hours or the unit must be placed in a MODE where the requirement does not apply. This is accomplished by placing the unit in MODE 3 within the next 6 hours (54 hours total time). The Completion Time of 6 hours is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. With the unit in MODE 3, ACTION C would apply to any inoperable RTB trip mechanism. The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition P. (5) (14)

The Completion Time of 48 hours for Required Action S.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval. (5)

Move ACTIONS S.1 and S.2 on page B 3.3.1-43 here

SURVEILLANCE REQUIREMENTS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval. (7)

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P

BASES

SURVEILLANCE REQUIREMENTS (continued)

Stet, with changes

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3. This Surveillance is not required if it has been performed within the previous 31 days. Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the ~~[P-9]~~ interlock.

put in both places

5

7

7

SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 14). Individual component response times are not modeled in the analyses.

The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core).

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

12

----------REVIEWER'S NOTE----------
Applicable portions of the following Bases are applicable for plants adopting WCAP-13632-P-A and/or WCAP-14036-P.

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JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1 BASES, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made to the ISTS Bases that reflect the adoption of proposed Revision 4 of TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions". Three options are provided for licensees to pursue when adopting TSTF-493. Kewaunee Power Station (KPS) has elected to implement TSTF-493 via the use of a Setpoint Control Program. Under this adoption strategy, KPS relocates the Technical Specification Section 3.3, "Instrumentation," Limiting Trip Setpoints, Nominal Trip Setpoints, and/or Allowable Values from the Technical Specifications to a licensee-controlled Setpoint Control Program. The requirements for the Setpoint Control Program will be described in Chapter 5, "Administrative Controls," of the Technical Specifications.

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

5. Changes are made to reflect changes made to the Specifications.

6. Typographical error corrected.

7. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

8. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, ~~and~~ K, and N are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Condition D, E, ~~and~~ K, and N (which is Condition S in the KPS ITS).

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design. Also, the Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. Furthermore, the bracketed value and the Reviewer's Note allows options dependent upon if the plant is incorporating WCAP-14333 and WCAP-15376. Since KPS is incorporating both of the WCAPs, the correct section has been selected.

Licensee Response/NRC Response/NRC Question Closure

Id	**3001**
NRC Question Number	**KAB-035**
Select Application	**Licensee Response**
Response Date/Time	**5/14/2010 10:55 AM**
Closure Statement	
Response Statement	**Based on a recent phone conversation, KPS is modifying the markup previously submitted to include Page 137 of 517. This page is being included to show that the previous change, in response to KAB-035, is being removed. The draft markup regarding this change is attached and superseded all previous markups. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**KAB-035 Markup (alt) Rev. 1.pdf** (2MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**5/14/2010 10:51 AM**
Modified By	
Date Modified	

A01

Table 3.3.1-1
Function

LA01

A03

REQUIRED

LA01

Applicability

TABLE TS 3.5-2

INSTRUMENT OPERATION CONDITIONS FOR REACTOR TRIP

		1	2	3	4	5	6
FUNCTIONAL UNIT		NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 4 OR 4 CANNOT BE MET
17.	Reactor Trip Breaker (RTB)	2	1	2	-	The RTBs may be bypassed for up to 8 hrs. for surveillance testing or maintenance	Maintain HOT SHUTDOWN and open the RTBs
18.	(Independently Test Shunt and Undervoltage Trip Attachments)	2/bkr	1	2	-		After 72 hours maintain HOT SHUTDOWN and open the RTBs

M13

4

L02

Add proposed ACTION O

L02

Add proposed Required Action R.1 and associated Completion Time.

L03

Add proposed Required Action R.2 and associated Completion Time.

M08

Add proposed Applicability and ACTION C

M09

Add proposed Functions 20.a and 20.b and ACTION S

M15

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Table 3.3.1-1 Function

SR 3.3.1.1 SR 3.3.1.10 SR 3.3.1.5, SR 3.3.1.13

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

A06

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
16.e 24. Turbine First Stage Pressure	Each shift -1	Each refueling cycle -10	Monthly -13	18 months L08
25. Deleted				See ITS 3.8.1
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly -5	Includes auto load sequencer; 92 days on STAGGERED TEST BASIS L09 M12
27. Deleted			Add proposed Applicability and number of Required Channels	A12
28. Deleted			Add proposed ACTION N	L14
29. Seismic Monitoring System	Each refueling cycle	Each refueling cycle	Not applicable	See ITS 3.3.3
30. Fore Bay Water Level	Not applicable	Each refueling cycle	Each refueling cycle	See ITS 3.7.8
31. AFW Flow Rate	(a)	Each refueling cycle	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown
32. PORV Position Indication	Monthly	Each refueling cycle	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle	Not applicable	

See ITS 3.3.3

Add proposed SR 3.3.1.13 for Function 16.a

Add proposed SR 3.3.1.11 for Functions 16.a, 16.c and 16.d

Add proposed SR 3.3.1.5 for Function 16.b

M14

Add proposed SR 3.3.1.10 for Function 20.a and SR 3.3.1.15 for Functions 20.a and 20.b

M15

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(Function 16.a) every 18 months. Additionally, ITS Table 3.3.1-1 requires performance of an ACTUATION LOGIC TEST (ITS SR 3.3.1.5) for the Power Range Neutron Flux, P-7 (Function 16.b). ITS SR 3.3.1.5 requires performance of an ACTUATION LOGIC TEST every 92 days on a STAGGERED TEST BASIS. ITS SR 3.3.1.11 requires performance of CHANNEL CALIBRATION in accordance with the Setpoint Control Program every 18 months. This surveillance is modified by a Note which excludes the neutron detectors from the CHANNEL CALIBRATION. ITS SR 3.3.1.13 requires performance of a COT every 18 months. This changes the CTS by requiring performance of a COT, CHANNEL CALIBRATION and an ACTUATION LOGIC TEST on the Permissive/Interlocks that was not required in the CTS.

The addition of these test is acceptable because the COT, CHANNEL CALIBRATION and ACTUATION LOGIC TEST will verify that the Permissive/Interlocks are functioning properly and will perform their required safety functions. A COT injects a signal into the channel to verify the OPERABILITY of all the devices. A CHANNEL CALIBRATION adjusts the output of the channel so that it will respond within the parameters that the channel monitors. An ACTUATION LOGIC TEST verifies that the output logic is appropriate for the input parameters. This change is designated as more restrictive because Surveillance Requirements are being added to the ITS that were not required in the CTS.

Insert M15

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS Table TS 3.5-2 has four columns stating various requirements for each Functional Unit. These columns are titled "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," "MINIMUM OPERABLE CHANNELS," and "MINIMUM DEGREE OF REDUNDANCY." ITS Table 3.3.1-1 does not contain the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns. This changes the CTS by moving the information provided in the "NO. OF CHANNELS," "NO. OF CHANNELS TO TRIP," and "MINIMUM DEGREE OF REDUNDANCY" columns to the Bases. Note that Discussion of Changes M01 describes the changes to the number of channels required by the LCO and Discussion of Change A03 describes the change in the title of the "MINIMUM OPERABLE CHANNELS" column.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels (which includes all of the installed channels) and the appropriate Condition to enter if a required channel is inoperable. In addition,

INSERT M15

The CTS has no specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine Trip - Turbine Stop Valve Closure reactor trips, except for a line item in CTS 2.3.a.7, which only specifies that there is a turbine trip. ITS Table 3.3.1-1 provides the requirements for these two trips (Functions 20.a and 20.b), including the number of required channels, the Applicability, an ACTION to take if a channel is inoperable (ACTION S), and Surveillance Requirements (ITS SR 3.3.1.10 and SR 3.3.1.15). This changes the CTS by adding specific requirements for the Turbine Trip - Fluid Oil Pressure Low and Turbine trip - Turbine Stop Valve Closure reactor trip Functions.

The Turbine Trip Functions anticipate the loss of heat removal capabilities of the secondary system following a turbine trip. While these trip Functions are not assumed in any accident or transient in the USAR, they act to minimize the pressure/temperature transient on the reactor and act as a backup trip to the Pressurizer Pressure - High reactor trip. These Functions, including the associated ACTION and Surveillance Requirements, are being added to the KPS ITS consistent with the fourth DEK response to NRC question KAB-035. In addition, the proposed ACTION (ITS 3.3.1 ACTION S) when a channel is inoperable is based upon WCAP-14333. DEK has performed an evaluation associated with the WCAP to justify the new ACTION. This change is designated as more restrictive because new requirements are being included in the ITS related to the Turbine Trip reactor trip that are not required in the CTS.

this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA02 *(Type 4 – Removal of LCO, SR, or other TS Requirement to the TRM, USAR, ODCM, NFQAPD, CLRT Program, IST Program, ISI Program, or Setpoint Control Program)* CTS Table TS 3.5-2 Notes contains Setting Limits for Permissive/Interlocks P-6, P-7, P-8, and P-10. CTS 2.3.a.1 specifies the reactor trip settings for Nuclear Flux instrumentation. CTS 2.3.a.2 specifies the reactor trip settings for the pressurizer. CTS 2.3.a.3.A specifies Reactor Coolant Temperature – Overtemperature settings. CTS 2.3.a.3.B specifies Reactor Coolant Temperature Overpower settings. CTS 2.3.a.4 specifies the Reactor Coolant Flow settings. CTS 2.3.a.5 specifies the Steam Generator settings. CTS 2.3.a.6 specifies the Reactor Trip Interlock settings. CTS 2.3.a.7 specifies other Trips which include Undervoltage trip, turbine trip, manual trip, and safety injection trip. ITS 3.3.1 does not contain Setting Limits for the RPS instrumentation. This changes the CTS by moving the Setting Limits and the reactor trip settings for Nuclear Flux instrumentation, pressurizer, Reactor Coolant Temperature, Steam Generator, Undervoltage trip, ~~turbine trip, manual trip,~~ and safety injection trip to the Setpoint Control Program.

Note that there are no Setting Limits for the Turbine Trip or the Manual Trip, thus no settings are being moved; only the line item is being deleted.

The removal of these Setting Limits is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still maintains the requirement for the number of required channels and the appropriate Condition to enter if a required channel is inoperable. In addition, this change is acceptable because the removed information will be adequately controlled in the Setpoint Control Program. Changes to the Setpoint Control Program are made under 10 CFR 50.59, which ensures that changes are properly evaluated. This change is designated as a less restrictive removal of detail change because Allowable Value/Setpoint Information is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Note (a) to CTS Table TS 4.1-1 Channel Description 1 (Nuclear Power Range) in the Remarks Section states that the weekly Channel Check contains a heat balance. Note (b) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the monthly CHANNEL FUNCTIONAL TEST contains the signal to ΔT and bistable action (permissive, rod stop, and trips). Note (c) to CTS Table TS 4.1-1 Channel Description 1 in the Remarks Section states that the Effective Full Power quarterly CHANNEL CALIBRATION contains upper and lower chambers for axial off-set using incore detectors. ITS 3.3.1 does not contain these requirements. This changes the CTS by moving these details to the Bases.

The removal of these details, which relate to system design, from the Technical Specifications is acceptable because this type of information is not necessary to

CTS

All changes are 1 unless otherwise noted

P

ACTIONS (continued)

Stet with changes

CONDITION	REQUIRED ACTION	COMPLETION TIME
S DOC M15 Move to after ACTION R on Page 3.3.1-9 ~~N.~~ One Turbine Trip channel inoperable.	~~[~~----------NOTE---------- The inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels. ---------- ~~----------REVIEWER'S NOTE----------~~ ~~The below Note should be used for plants with installed bypass test capability.~~ ~~One channel may be bypassed for up to 12 hours for surveillance testing.~~ ~~----------]~~	
	~~N.1~~ Place channel in trip. OR	72 hours
S	~~N.2~~ Reduce THERMAL POWER to < ~~[P-9]~~. 7	76 hours
DOC L14 ~~O.~~ N One train inoperable.	----------NOTE---------- One train may be bypassed for up to ~~[4]~~ 2 hours for surveillance testing provided the other train is OPERABLE. ----------	
	~~O.~~ N.1 Restore train to OPERABLE status. OR	24 hours
	~~O.~~ N.2 Be in MODE 3.	30 hours

10 9 ~~10~~ 10 5 4 2 4 4

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
Table TS 3.5-2 Functional Unit 17 ~~S~~. One trip mechanism inoperable for one RTB. R	~~S~~.1 Restore inoperable trip mechanism to OPERABLE status. R OR ~~S~~.2 Be in MODE 3. R	48 hours 4 54 hours 4

Move ACTION S here from Page 3.3.1-7

SURVEILLANCE REQUIREMENTS

----------NOTE----------

Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function. P

	SURVEILLANCE		FREQUENCY
Table TS 4.1-1 Channel Descriptions 1, 7, 11.a, 12, 24, DOC M10	SR 3.3.1.1	Perform CHANNEL CHECK.	12 hours
Table TS 4.1-1 Channel Description 1	SR 3.3.1.2	----------NOTE---------- Not required to be performed until ~~[~~12~~]~~ hours after THERMAL POWER is ≥ 15% RTP. ---------- Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range channel output if calorimetric heat balance calculations results exceed power range channel output by more than +2% RTP.	2 24 hours

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All changes are 1 unless otherwise noted

P

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY	
Table TS 4.1-1 Channel Description 2.a	SR 3.3.1.9	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[92] days	2
Table TS 4.1-1 Channel Descriptions 5, 6, 7, 8.a, 11.a, 12 and 24 , DOC M15	SR 3.3.1.10	----------NOTE---------- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	8 5 2
DOC M10, DOC M11, DOC M14	SR 3.3.1.11	----------NOTE---------- Neutron detectors are excluded from CHANNEL CALIBRATION. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	5 2
Table TS 4.1-1 Channel Description 4	SR 3.3.1.12	----------NOTE---------- This Surveillance shall include verification of Reactor Coolant System resistance temperature detector bypass loop flow rate. ---------- Perform CHANNEL CALIBRATION. (in accordance with the Setpoint Control Program)	[18] months	5 2
Table TS 4.1-1 Channel Description 1, DOC M14	SR 3.3.1.13	Perform COT.	18 months	
Table TS 4.1-3 Equipment Tests 1.b and 1.c	SR 3.3.1.14	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	[18] months	2

CTS

All changes are 1 unless otherwise noted

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.15	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	Prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16	----------NOTE---------- Neutron detectors are excluded from response time testing. ---------- Verify RTS RESPONSE TIME is within limits.	[18] months on a STAGGERED TEST BASIS

DOC M15

Stet

7

2

~~4~~

7

CTS

All changes are 1 unless otherwise noted

Table 3.3.1-1 (page 3 of 7)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-3 Equipment Test 1.a, DOC A11, DOC L13 — 11. Reactor Coolant Pump (RCP) BreakerPosition						
a. Single Loop	1[f]	1 per RCP	L	SR 3.3.1.14	NA	NA
b. Two Loops	1[g]	1 per RCP	M	SR 3.3.1.14	NA	NA
Table TS 3.5-2 Functional Unit 13, Table TS 4.1-1 Channel Description 8.a — 12. Undervoltage RCPs	1[e]	[3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [4760] V	[4830] V
Table TS 3.5-2 Functional Unit 14, Table TS 4.1-1 Channel Description 8a — 13. Underfrequency RCPs	1[e]	[3] per bus	K	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ [57.1] Hz	[57.5] Hz
Table TS 3.5-2 Functional Unit 12, Table TS 4.1-1 Channel Description 11a — 14. Steam Generator (SG) Water Level - Low Low	1,2	[4 per SG]	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
15. SG Water Level - Low	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [30.4]%	[32.3]%
Table TS 3.5-2 Functional Unit 16, Table TS 4.1-1 Channel Description 12 — Coincident with Steam Flow/Feedwater Flow Mismatch	1,2	2 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [42.5]% full steam flow at RTP	[40]% full steam flow at RTP
~~16.~~ 20 Turbine Trip						
a. Low Fluid Oil Pressure	1[h]	3	N	SR 3.3.1.10 SR 3.3.1.15	≥ [750] psig	[800] psig
b. Turbine Stop Valve Closure	1[h]	4	N	SR 3.3.1.10 SR 3.3.1.15	≥ [1]% open	[1]% open

Stet with changes

DOC M15

Move to after Function 19 on page 3.3.1-19

(e) Above the P-7 (Low Power Reactor Trips Block) interlock.

(f) Above the P-8 (Power Range Neutron Flux) interlock.

(g) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) Interlock

(h) Above the P-9 (Power Range Neutron Flux) interlock.

REVIEWER'S NOTE

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

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All changes are 1 unless otherwise noted

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Table 3.3.1-1 (page 5 of 7) 5
Reactor Trip System Instrumentation
Protection

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL[j] TRIP SETPOINT	
Table TS 3.5-2 Functional Unit 17, Table TS 4.1-3 Equipment Test 1.a, DOC M09	20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms (18)	1,2	2 → 1 each per RTB	R → S	SR 3.3.1.4	NA	NA	4 5
		3[b], 4[b], 5[b]	2 → 1 each per RTB	C	SR 3.3.1.4	NA	NA	4 5
Table TS 4.1-1 Channel Description 26, DOC A12, DOC L14	21. Automatic Trip Logic (19)	1,2	2 trains	N → Ø	SR 3.3.1.5	NA	NA	4 5
	Move Function 20 here	3[b], 4[b], 5[b]	2 trains	C	SR 3.3.1.5	NA	NA	5

----------REVIEWER'S NOTE---------- 5

(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.

(j) Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 5

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JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

(increasing times), that could impact safety, do not normally vary such that they would not be detected during other required surveillances (e.g., CHANNEL CALIBRATIONS). Since the addition of these tests would be a major burden (plant design does not readily lend itself to such testing) with little gain in safety, ISTS SR 3.3.1.16 has not been added.

8. A Note to ISTS SR 3.3.1.10 requires the CHANNEL CALIBRATION to include verification that time constants are adjusted to the prescribed values. ITS SR 3.3.1.10 does not include this Note since it does not apply to any ITS Table 3.3.1-1 Functions that include time constants.

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, and K are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Conditions D, E, and K.

INSERT JFD 10

10. ~~ISTS Table 3.3.1-1 Function 16 (including Note h) provides the requirements for the Turbine Trip Function. This Function is not included in the KPS ITS. This Function is not assumed in any accident or transient in USAR Chapter 14. Therefore, it is not being added to the KPS ITS. This is also consistent with the current Technical Specifications, which does not include this RPS Function.~~

11. ISTS Table 3.3.1-1 Functions 17 (Reactor Trip Breakers (RTBs)) and 18 (Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms) requires performance of a TADOT (ISTS SR 3.3.1.4) every 62 days on a STAGGERED TEST BASIS. Based on KPS's review of 15376, Revision 1 ("Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times"), dated March 2003, the justification used to extend the Surveillance Test Interval from monthly on a STAGGERED TEST BASIS (i.e., each breaker tested every two months) to 62 days on a STAGGERED TEST BASIS (i.e., each breaker tested every four months) is not applicable to KPS since KPS tests the breakers monthly. Therefore, ITS SR 3.3.1.4 will contain the KPS current licensing requirement and the TADOT will be performed on a 31 day frequency.

INSERT JFD 10

Based on the fourth KPS response to NRC question KAB-035, DEK has added the Turbine Trip RPS Function into the ITS submittal. Changes to the Function requirements in ITS Table 3.3.1-1 have been made based on the KPS design. The Turbine Stop Valve Closure Function does not require a CHANNEL CALIBRATION Surveillance (ISTS SR 3.3.1.10) since the Function is a limit switch. Thus, only the TADOT Surveillance (ISTS SR 3.3.1.15) has been added. In addition, both the Function number in the Table and the ACTION designator have been changed to preclude unnecessary administrative burdens since this Function and its associated ACTION have been added late in the review process.

All changes are 1 unless otherwise noted

BASES

BACKGROUND (continued)

During normal operation the output from the SSPS is a voltage signal that energizes the undervoltage coils in the RTBs and bypass breakers, if in use. When the required logic matrix combination is completed, the SSPS output voltage signal is removed, the undervoltage coils are de-energized, the breaker trip lever is actuated by the de-energized undervoltage coil, and the RTBs and bypass breakers are tripped open. This allows the shutdown rods and control rods to fall into the core. In addition to the de-energization of the undervoltage coils, each breaker is also equipped with a shunt trip device that is energized to trip the breaker open upon receipt of a reactor trip signal from the SSPS. Either the undervoltage coil or the shunt trip mechanism is sufficient by itself, thus providing a diverse trip mechanism.

The decision logic matrix Functions are described in the functional diagrams included in Reference 3. In addition to the reactor trip or ESF, these diagrams also describe the various "permissive interlocks" that are associated with unit conditions. Each train has a built in testing device that can automatically test the decision logic matrix Functions and the actuation devices while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The RTS functions to maintain the SLs during all AOOs and mitigates the consequences of DBAs in all MODES in which the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

INSERT 3

Each of the analyzed accidents and transients can be detected by one or more RTS Functions. The accident analysis described in Reference 4 takes credit for most RTS trip Functions. RTS trip Functions not specifically credited in the accident analysis are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RTS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RTS trip Functions that were credited in the accident analysis.

The LCO requires all instrumentation performing an RTS Function, listed in Table 3.3.1-1 ~~in the accompanying LCO,~~ to be OPERABLE. A channel is OPERABLE with a trip setpoint value outside its calibration tolerance band provided the trip setpoint "as-found" value does not exceed its

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 and by the RHR System in MODE 4, 5, or 6. The MFW System is in operation only in MODE 1 or 2 and, therefore, this trip Function need only be OPERABLE in these MODES.

Stet with changes

20

~~16~~. Turbine Trip

Move to after Function 19 on Page B 3.3.1-33

a. Turbine Trip - Low Fluid Oil Pressure

The Turbine Trip - Low Fluid Oil Pressure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip Function acts to minimize the pressure/temperature transient on the reactor. Any turbine trip from a power level below the P-~~9~~ setpoint, 7 10 approximately ~~50~~% power, will not actuate a reactor trip. Three pressure switches monitor the control oil pressure in the Turbine Electrohydraulic Control System. A low pressure condition sensed by two-out-of-three pressure switches will actuate a reactor trip. These pressure switches do not provide any input to the control system. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function and RCS integrity is ensured by the pressurizer safety valves. ~~5~~

The LCO requires three channels of Turbine Trip - Low Fluid Oil Pressure to be OPERABLE in MODE 1 above P-~~9~~. 7

Below the P-~~9~~ setpoint, a turbine trip does not actuate a reactor trip. In MODE 2, 3, 4, 5, or 6, there is no potential for a turbine trip, and the Turbine Trip - Low Fluid Oil Pressure trip Function does not need to be OPERABLE.

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P

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Stet with changes

Move to after Function 19 on Page B 3.3.1-33

b. Turbine Trip - Turbine Stop Valve Closure

The Turbine Trip - Turbine Stop Valve Closure trip Function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip from a power level below the P-9 setpoint, approximately 50% power. This action will not actuate a reactor trip. The trip Function anticipates the loss of secondary heat removal capability that occurs when the stop valves close. Tripping the reactor in anticipation of loss of secondary heat removal acts to minimize the pressure and temperature transient on the reactor. This trip Function will not and is not required to operate in the presence of a single channel failure. The unit is designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. Core protection is provided by the Pressurizer Pressure - High trip Function, and RCS integrity is ensured by the pressurizer safety valves. This trip Function is diverse to the Turbine Trip - Low Fluid Oil Pressure trip Function. Each turbine stop valve is equipped with one limit switch that inputs to the RTS. If all four limit switches indicate that the stop valves are all closed, a reactor trip is initiated.

10 7 both 5

The LSSS for this Function is set to assure channel trip occurs when the associated stop valve is completely closed.

two

The LCO requires four Turbine Trip - Turbine Stop Valve Closure channels, one per valve, to be OPERABLE in MODE 1 above P-9. All four channels must trip to cause reactor trip.

7 Both

Below the P-9 setpoint, a load rejection can be accommodated by the Steam Dump System. In MODE 2, 3, 4, 5, or 6, there is no potential for a load rejection, and the Turbine Trip - Stop Valve Closure trip Function does not need to be OPERABLE.

17. Safety Injection Input from Engineered Safety Feature Actuation System

The SI Input from ESFAS ensures that if a reactor trip has not already been generated by the RTS, the ESFAS automatic actuation logic will initiate a reactor trip upon any signal that initiates SI. This is a condition of acceptability for the LOCA. However, other transients

5

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All changes are 1 unless otherwise noted

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCPs Breaker Open (Two Loops); 3
- 3
- Undervoltage RCPs ~~and~~ ;
- Underfrequency RCPs.

; Turbine Trip - Low Fluid Oil Pressure; and Turbine trip - Turbine Stop Valve Closure.

or, in the case of the Turbine Trip Functions, provide a backup reactor trip during a loss of load event

These reactor trips are only required when operating above the P-7 setpoint (approximately 10% power). The reactor trips provide protection against violating the DNBR limit. Below the P-7 setpoint, the RCS is capable of providing sufficient natural circulation without any RCP running.

(2) on decreasing power, the P-7 interlock automatically blocks reactor trips on the following Functions:

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow - Low (low flow in two or more RCS loops); 3
- RCP Breaker Position (Two Loops); 3
- Undervoltage RCPs ~~and~~ ; 3
- Underfrequency RCPs.

Trip Setpoint and Allowable Value are not applicable to the P-7 interlock because it is a logic Function and thus has no parameter with which to associate an LSSS.

The P-7 interlock is a logic Function with train and not channel identity. Therefore, the LCO requires one channel per train of Low Power Reactor Trips Block, P-7 interlock to be OPERABLE in MODE 1.

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BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms

The LCO requires both the Undervoltage and Shunt Trip Mechanisms to be OPERABLE for each RTB that is in service. The trip mechanisms are not required to be OPERABLE for trip breakers that are open, racked out, incapable of supplying power to the Rod Control System, or declared inoperable under Function 19 above. OPERABILITY of both trip mechanisms on each breaker ensures that no single trip mechanism failure will prevent opening any breaker on a valid signal.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

21. Automatic Trip Logic

The LCO requirement for the RTBs (Functions 19 and 20) and Automatic Trip Logic (Function 21) ensures that means are provided to interrupt the power to allow the rods to fall into the reactor core. Each RTB is equipped with an undervoltage coil and a shunt trip coil to trip the breaker open when needed. Each RTB is equipped with a bypass breaker to allow testing of the trip breaker while the unit is at power. The reactor trip signals generated by the RTS Automatic Trip Logic cause the RTBs and associated bypass breakers to open and shut down the reactor.

The LCO requires two trains of RTS Automatic Trip Logic to be OPERABLE. Having two OPERABLE channels ensures that random failure of a single logic channel will not prevent reactor trip.

These trip Functions must be OPERABLE in MODE 1 or 2 when the reactor is critical. In MODE 3, 4, or 5, these RTS trip Functions must be OPERABLE when the Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted.

Move Function 20 here from pages B 3.3.1-25 and B 3.3.1-26

The RTS instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

status and the 4 additional hours allowed to reduce THERMAL POWER to below the P-8 setpoint are justified in Reference 11. 8 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

M.1 and M.2

Condition M applies to the RCP Breaker Position (Two Loops) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be placed in trip within [6] hours. If the channel cannot be placed in trip within the [6] hours, then THERMAL POWER must be reduced below the P-7 setpoint within the next 6 hours. 4

This places the unit in a MODE where the LCO is no longer applicable. This Function does not have to be OPERABLE below the P-7 setpoint because other RTS Functions provide core protection below the P-7 setpoint. The [6] hours allowed to place the channel in trip and the 6 additional hours allowed to reduce THERMAL POWER to below the P-7 setpoint are justified in Reference 11. P 8 4 10

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to [4] hours while performing routine surveillance testing of the other channels. The [4] hour time limit is justified in Reference 11. 8 4 4 10

Stet with changes

S

~~N.1 and N.2~~

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

~~Condition N applies to Turbine Trip on Low Fluid Oil Pressure or on Turbine Stop Valve Closure. With one channel inoperable, the inoperable channel must be placed in the trip condition within 72 hours. If placed in the tripped condition, this results in a partial trip condition requiring only one additional channel to initiate a reactor trip. If the channel cannot be restored to OPERABLE status or placed in the trip condition, then power must be reduced below the P-9 setpoint within the next 4 hours. The 72 hours allowed to place the inoperable channel in the tripped condition is justified in Reference 8. Four hours is allowed for reducing power.~~ 5 7

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

Stet with changes

Move to after ACTIONS R.1 and R.2 on page B 3.3.1-48

[The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of the other channels. The 12 hour time limit is justified in Reference 8.]

----------REVIEWER'S NOTE----------
The below text should be used for plants with installed bypass test capability:

The Required Actions are modified by a Note that allows placing one channel in bypass for up to 12 hours while performing routine surveillance testing. The 12 hour time limit is justified in Reference 8.

Ø.1 and Ø.2

Condition Ø applies to the SI Input from ESFAS reactor trip and the RTS Automatic Trip Logic in MODES 1 and 2. These actions address the train orientation of the RTS for these Functions. With one train inoperable, 24 hours are allowed to restore the train to OPERABLE status (Required Action Ø.1) or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of 24 hours (Required Action Ø.1) is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The 24 hours allowed to restore the inoperable RTS Automatic Trip Logic train to OPERABLE status is justified in Reference 8. The Completion Time of 6 hours (Required Action Ø.2) is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems.

The Required Actions have been modified by a Note that allows bypassing one train up to [4] hours for surveillance testing, provided the other train is OPERABLE. [The [4] hour time limit for testing the RTS Automatic Trip logic train may include testing the RTB also, if both the Logic test and RTB test are conducted within the [4] hour time limit. The [4] hour time limit is justified in Reference 8.]

----------REVIEWER'S NOTE----------
The below text should replace the bracketed information in the previous paragraph if WCAP-14333 and WCAP-15376 are being incorporated:

The [4] hour time limit for the RTS Automatic Trip Logic train testing is greater than the 2 hour time limit for the RTBs, which the logic train

All changes are 1 unless otherwise noted

BASES

ACTIONS (continued)

S.1 and S.2 (5)

Condition S applies to the RTB Undervoltage and Shunt Trip Mechanisms, or diverse trip features, in MODES 1 and 2. With one of the diverse trip features inoperable, it must be restored to an OPERABLE status within 48 hours or the unit must be placed in a MODE where the requirement does not apply. This is accomplished by placing the unit in MODE 3 within the next 6 hours (54 hours total time). The Completion Time of 6 hours is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. With the unit in MODE 3, ACTION C would apply to any inoperable RTB trip mechanism. The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition P. (5) (14)

The Completion Time of 48 hours for Required Action S.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval. (5)

Move ACTIONS S.1 and S.2 on page B 3.3.1-43 here

SURVEILLANCE REQUIREMENTS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval. (7)

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 112 of 138
Attachment 1, Volume 8, Rev. 0, Page 126 of 517

KAB 065 page changes.
Page added for info.

2

INSERT 7

~~in accordance with the assumptions of the unit specific setpoint methodology specified in the SCP to ensure instrument channel OPERABILITY between periodic testing required by the CHANNEL CALIBRATION.~~

The test is performed in accordance with the SCP. If the actual setting of the channel is found to be conservative with respect to the Allowable Value but is beyond the as-found tolerance band, the channel is OPERABLE but degraded. The degraded condition of the channel will be further evaluated during performance of the SR. This evaluation will consist of resetting the channel setpoint to the NTSP (within the allowed tolerance), and evaluating the channel response. If the channel is functioning as required and is expected to pass the next surveillance, then the channel is OPERABLE and can be restored to service at the completion of the surveillance. After the surveillance is completed, the channel as-found condition will be entered into the Corrective Action Program for further evaluation.

All changes are 1 unless otherwise noted

P

BASES

SURVEILLANCE REQUIREMENTS (continued)

Stet, with changes

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the ~~[P-9]~~ interlock whenever the unit has been in MODE 3. This Surveillance is not required if it has been performed within the previous 31 days. Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the ~~[P-9]~~ interlock.

put in both places

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SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 14). Individual component response times are not modeled in the analyses.

The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core).

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

12

----------REVIEWER'S NOTE----------
Applicable portions of the following Bases are applicable for plants adopting WCAP-13632-P-A and/or WCAP-14036-P.

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 114 of 138
Attachment 1, Volume 8, Rev. 0, Page 141 of 517

JUSTIFICATION FOR DEVIATIONS
ITS 3.3.1 BASES, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

1. Changes are made (additions, deletions, and/or changes) to the ISTS Bases which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

2. Changes are made to the ISTS Bases that reflect the adoption of proposed Revision 4 of TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions". Three options are provided for licensees to pursue when adopting TSTF-493. Kewaunee Power Station (KPS) has elected to implement TSTF-493 via the use of a Setpoint Control Program. Under this adoption strategy, KPS relocates the Technical Specification Section 3.3, "Instrumentation," Limiting Trip Setpoints, Nominal Trip Setpoints, and/or Allowable Values from the Technical Specifications to a licensee-controlled Setpoint Control Program. The requirements for the Setpoint Control Program will be described in Chapter 5, "Administrative Controls," of the Technical Specifications.

3. The punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, TSTF-GG-05-01, Section 5.1.3.

4. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design.

5. Changes are made to reflect changes made to the Specifications.

6. Typographical error corrected.

7. The Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal.

8. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. Required Actions for Conditions D, E, ~~and~~ K, and N are modified by a Note that provides two options for bypassing a channel for up to 12 hours for the purpose of performing surveillance testing without requiring entry into the applicable Required Actions. One option is for plants that have installed bypass testing capabilities. The other option is for plants that do not have installed bypass testing capabilities. KPS does not have installed bypass testing capabilities. Therefore, the Note for plants that do not have bypass testing capabilities is retained for Condition D, E, ~~and~~ K, and N (which is Condition S in the KPS ITS).

9. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the generic specific information/value is revised to reflect the current plant design. Also, the Reviewer's Note has been deleted. The information is for the NRC reviewer to be keyed into what is needed to meet this requirement. This is not meant to be retained in the final version of the plant specific submittal. Furthermore, the bracketed value and the Reviewer's Note allows options dependent upon if the plant is incorporating WCAP-14333 and WCAP-15376. Since KPS is incorporating both of the WCAPs, the correct section has been selected.

Licensee Response/NRC Response/NRC Question Closure

Id	**3261**
NRC Question Number	**KAB-035**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**5/26/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**5/26/2010 11:47 AM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1181**
NRC Question Number	**KAB-036**
Category	**Editorial**
ITS Section	**3.3**
ITS Number	**3.3.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number (s)	**80**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**On page 80 of Attachment 1, volume 8, the Bases background section indicates that figure 7.2-2 is in USAR Chapter 14 and references (Ref. 4) which is also chapter 14. However Figure 7.2-2 is in USAR chapter 7 and not in chapter 14. Please explain why USAR Chapter 7 (Ref. 2) was not referenced.**
Attach File 1	
Attach File 2	
Issue Date	**11/24/2009**
Added By	**Kristy Bucholtz**
Date Modified	
Modified By	
Date Added	**11/24/2009 8:40 AM**
Notification	**NRC/LICENSEE Supervision**

Licensee Response/NRC Response/NRC Question Closure

Id	**921**
NRC Question Number	**KAB-036**
Select Application	**Licensee Response**
Response Date/Time	**11/30/2009 3:20 PM**
Closure Statement	
Response Statement	**After further review, Kewaunee has determined that in Attachment 1, Volume 8 on Page 80 of 517, the USAR Chapter referenced should have been Chapter 7. Additionally, the reference number should have been Reference 2. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**KAB-036 Markup.pdf** (1MB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**11/30/2009 3:23 PM**
Modified By	
Date Modified	

All changes are 1 unless otherwise noted

P

BASES

BACKGROUND (continued)

P

STET w/Changes

The RTS instrumentation is segmented into four distinct but interconnected modules as illustrated in Figure [ ], FSAR, Chapter [7] (Ref. 2), and as identified below: 4

STET

7.2-2 U 14

4

1. Field transmitters or process sensors: provide a measurable electronic signal based upon the physical characteristics of the parameter being measured; 3

Protection Instrumentation Rack (PPIR)

Reactor

2. Signal Process Control and Protection System, including Analog Protection System, Nuclear Instrumentation System (NIS), field contacts, and protection channel sets: provides signal conditioning, bistable setpoint comparison, process algorithm actuation, compatible electrical signal output to protection system devices, and control board/control room/miscellaneous indications; 2 3

Channels and

Channels

channels

bistable

Reactor Protection Logic Rack

3. Solid State Protection System (SSPS), including input, logic, and output bays: initiates proper unit shutdown and/or ESF actuation in accordance with the defined logic, which is based on the bistable outputs from the signal process control and protection system, and 3

racks

reactor protection logic rack;

4. Reactor trip switchgear, including reactor trip breakers (RTBs) and bypass breakers: provides the means to interrupt power to the control rod drive mechanisms (CRDMs) and allows the rod cluster control assemblies (RCCAs), or "rods," to fall into the core and shut down the reactor. The bypass breakers allow testing of the RTBs at power.

Field Transmitters or Sensors

To meet the design demands for redundancy and reliability, more than one, and often as many as four, field transmitters or sensors are used to measure unit parameters. To account for the calibration tolerances and instrument drift, which are assumed to occur between calibrations, statistical allowances are provided in the trip setpoint and Allowable Values. The OPERABILITY of each transmitter or sensor is determined by either "as-found" calibration data evaluated during the CHANNEL CALIBRATION or by qualitative assessment of field transmitter or sensor as related to the channel behavior observed during performance of the CHANNEL CHECK. 2 2

NTSP

The specific as-found values to ensure that the channel is OPERABLE and that Safety Limits are not exceeded are specified in the SCP.

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 119 of 138

Licensee Response/NRC Response/NRC Question Closure

Id	**1411**
NRC Question Number	**KAB-036**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**1/4/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**1/4/2010 2:21 PM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1191**
NRC Question Number	**KAB-037**
Category	**Editorial**
ITS Section	**3.3**
ITS Number	**3.3.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number (s)	**82**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**On page 82 of Attachment 1, volume 8, the sentence, "The Allowable Value serves as the Technical Specification OPERABILITY limit for the purpose of the COT." has been deleted in the bases background (continued) section. This deletion is not consistent with TSTF-493 as referenced by Note 2 or STS NUREG-1431 Bases. Please explain this discrepancy.**
Attach File 1	
Attach File 2	
Issue Date	**11/24/2009**
Added By	**Kristy Bucholtz**
Date Modified	
Modified By	
Date Added	**11/24/2009 8:40 AM**
Notification	**NRC/LICENSEE Supervision**

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 121 of 138

Licensee Response/NRC Response/NRC Question Closure

Id	**931**
NRC Question Number	**KAB-037**
Select Application	**Licensee Response**
Response Date/Time	**11/30/2009 2:25 PM**
Closure Statement	
Response Statement	**Kewaunee Power Station (KPS) has reviewed proposed TSTF-493 Rev. 4 and concurs with the assessment that the sentence "The Allowable Value serves as the Technical Specification OPERABILITY limit for the purpose of the COT" should not have been deleted. Instead it should have been revised to include the words "as-found" to facilitate that the Allowable Value serves as the "as-found" OPERABILITY limit for the COT. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.** **Please note that TSTF-493 Rev. 4 was not an approved traveler at the time of the KPS submittal and that the KPS submittal was marked up to the draft version of TSTF-493 sent to the NRC in July of 2009.**
Question Closure Date	
Attachment 1	**KAB-037 Markup.pdf** (812KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**11/30/2009 3:26 PM**
Modified By	
Date Modified	

All changes are 1 unless otherwise noted

P

BASES

BACKGROUND (continued)

Nominal Trip

Allowable Values and RTS Setpoints

Nominal Trip Setpoints

The trip setpoints used in the bistables are based on the analytical limits stated in Reference 2. The selection of these trip setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 6), the Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservative with respect to the analytical limits. A detailed description of the methodology used to calculate the Allowable Values and trip setpoints, including their explicit uncertainties, is provided in the "RTS/ESFAS Setpoint Methodology Study" (Ref. 7) which incorporates all of the known uncertainties applicable to each channel. The magnitudes of these uncertainties are factored into the determination of each trip setpoint and corresponding Allowable Value. The trip setpoint entered into the bistable is more conservative than that specified by the Allowable Value (LSSS) to account for measurement errors detectable by the COT. The Allowable Value serves as the Technical Specification OPERABILITY limit for the purpose of the COT. ~~One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.~~

P

the SCP

NTSP

The as-left tolerance and as-found tolerance band methodology is provided in Ref. ~~xyz~~.

7

as-found

STET w/changes

2

The trip setpoint is the value at which the bistable is set and is the expected value to be achieved during calibration. The trip setpoint value ensures the LSSS and the safety analysis limits are met for the surveillance interval selected when a channel is adjusted based on stated channel uncertainties. Any bistable is considered to be properly adjusted when the "as left" setpoint value is within the as-left tolerance band for CHANNEL CALIBRATION uncertainty allowance (i.e., ± rack calibration and comparator setting uncertainties). The trip setpoint value is therefore considered a "nominal" value (i.e., expressed as a value without inequalities) for the purposes of COT and CHANNEL CALIBRATION.

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Nominal

Trip setpoints consistent with the requirements of the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed).

, in conjunction with the use of as-found and as-left tolerances, together

2

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 123 of 138

Licensee Response/NRC Response/NRC Question Closure

Id	**1471**
NRC Question Number	**KAB-037**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**1/5/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**1/5/2010 8:29 AM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1201**
NRC Question Number	**KAB-038**
Category	**Editorial**
ITS Section	**3.3**
ITS Number	**3.3.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number (s)	**82-83**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**TSTF 493 adds the following paragraph to the STS NUREG-1431 Bases. "Note that the Allowable Values listed in the SCP are the least conservative value of the as-found setpoint that a channel can have during a periodic CHANNEL CALIBRATION, CHANNEL OPERATIONAL TESTS, or a TRIP ACTUATING DEVICE OPERATIONAL TEST that requires trip setpoint verification." Please add the paragraph to the ITS Bases or provide an explanation for the deviation.**
Attach File 1	
Attach File 2	
Issue Date	**11/24/2009**
Added By	**Kristy Bucholtz**
Date Modified	
Modified By	
Date Added	**11/24/2009 8:45 AM**
Notification	**NRC/LICENSEE Supervision**

Licensee Response/NRC Response/NRC Question Closure

Id	**941**
NRC Question Number	**KAB-038**
Select Application	**Licensee Response**
Response Date/Time	**11/30/2009 3:25 PM**
Closure Statement	
Response Statement	**Kewaunee Power Station (KPS) has reviewed proposed TSTF-493 Rev. 4 and concurs that the sentence "Note that the Allowable Value listed in the SCP are the least conservative value of the as-found setpoint that channel can have during a periodic CHANNEL CALIBRATION, CHANNEL OPERATIONAL TEST, or a TRIP ACTUATING DEVICE OPERATIONAL TEST that requires a trip setpoint verification" is required to be added. Note that KPS has chosen to use the singular term "CHANNEL OPERATIONAL TEST" since the other two terms are singular. A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.** **Please note that TSTF-493 Rev. 4 was not an approved traveler at the time of the KPS submittal and that the KPS submittal was marked up to the draft version of TSTF-493 sent to the NRC in July of 2009.**
Question Closure Date	
Attachment 1	**KAB-038 Markup.pdf** (810KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**11/30/2009 3:28 PM**
Modified By	
Date Modified	

All changes are 1 unless otherwise noted

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BASES

BACKGROUND (continued)

Nominal Trip

Allowable Values and RTS Setpoints

Nominal Trip Setpoints

The trip setpoints used in the bistables are based on the analytical limits stated in Reference 2. The selection of these trip setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 6), the Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservative with respect to the analytical limits. A detailed description of the methodology used to calculate the Allowable Values and trip setpoints, including their explicit uncertainties, is provided in the "RTS/ESFAS Setpoint Methodology Study" (Ref. 7) which incorporates all of the known uncertainties applicable to each channel. The magnitudes of these uncertainties are factored into the determination of each trip setpoint and corresponding Allowable Value. The trip setpoint entered into the bistable is more conservative than that specified by the Allowable Value (LSSS) to account for measurement errors detectable by the COT. The Allowable Value serves as the Technical Specification OPERABILITY limit for the purpose of the COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE.

P

the SCP

NTSP

The as-left tolerance and as-found tolerance band methodology is provided in Ref. xyz.

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The trip setpoint is the value at which the bistable is set and is the expected value to be achieved during calibration. The trip setpoint value ensures the LSSS and the safety analysis limits are met for surveillance interval selected when a channel is adjusted based on stated channel uncertainties. Any bistable is considered to be properly adjusted when the "as left" setpoint value is within the band for CHANNEL CALIBRATION uncertainty allowance (i.e., ± rack calibration + comparator setting uncertainties). The trip setpoint value is therefore considered a "nominal" value (i.e., expressed as a value without inequalities) for the purposes of COT and CHANNEL CALIBRATION.

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Nominal

Trip setpoints consistent with the requirements of the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed).

, in conjunction with the use of as-found and as-left tolerances, together

2

Note that the Allowable Values listed in the SCP are the least conservative value of the as-found setpoint that a channel can have during a periodic CHANNEL CALIBRATION, CHANNEL OPERATIONAL TEST, or a TRIP ACTUATING DEVICE OPERATIONAL TEST that requires trip setpoint verification.

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 127 of 138

Licensee Response/NRC Response/NRC Question Closure

Id	**1481**
NRC Question Number	**KAB-038**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**1/5/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**1/5/2010 8:33 AM**
Modified By	
Date Modified	

ITS NRC Questions

Id	**1211**
NRC Question Number	**KAB-039**
Category	**Editorial**
ITS Section	**3.3**
ITS Number	**3.3.1**
DOC Number	
JFD Number	
JFD Bases Number	
Page Number(s)	**126**
NRC Reviewer Supervisor	**Rob Elliott**
Technical Branch POC	**Add Name**
Conf Call Requested	**N**
NRC Question	**On page 126 of Attachment 1, volume 8, the deleted sentences from the Bases references JFD ITS Base item 14, however item 14 does not exist. Please provide an explanation for the removal of information from the ITS Bases.**
Attach File 1	
Attach File 2	
Issue Date	**11/24/2009**
Added By	**Kristy Bucholtz**
Date Modified	
Modified By	
Date Added	**11/24/2009 8:48 AM**
Notification	**NRC/LICENSEE Supervision**

Licensee Response/NRC Response/NRC Question Closure

Id	**1021**
NRC Question Number	**KAB-039**
Select Application	**Licensee Response**
Response Date/Time	**12/2/2009 7:10 AM**
Closure Statement	
Response Statement	**After further review, Kewaunee Power Station has determined that there was no Justification for Deviation (JFD) written for JFD 14 on Attachment 1 Volume 8, Page 126 of 517. Additionally, there was no justification for deviation written for JFD 13 on Attachment 1, Volume 8, Pages 119 and 120 of 517 and the wrong justification for deviation was listed for JFD 12 on Attachment 1, Volume 8, Pages 141 and 142 of 517. Note that the reference to JFD 14 in the ITS Bases Markup is now listed as JFD 13, the reference to JFD 13 in the ITS Bases Markup is now listed as JFD 12, and the reference to JFD 12 in the ITS Bases Markup is now listed as JFD 11 (which did exist in the Bases JFDs). A draft markup regarding this change is attached. This change will be reflected in the supplement to this section of the ITS conversion amendment.**
Question Closure Date	
Attachment 1	**KAB-039 Markup.pdf** (923KB)
Attachment 2	
Notification	**NRC/LICENSEE Supervision** **Kristy Bucholtz** **Jerry Jones** **Bryan Kays** **Ray Schiele**
Added By	**Robert Hanley**
Date Added	**12/2/2009 7:13 AM**
Modified By	
Date Modified	

BASES

ACTIONS (continued)

J.1, J.2.1, and J.2.2

Condition J applies to one inoperable source range channel in MODE 3, 4, or 5 with the Rod Control System capable of rod withdrawal or one or more rods not fully inserted. With the unit in this Condition, below P-6, the NIS source range performs the monitoring and protection functions. With one of the source range channels inoperable, 48 hours is allowed to restore it to an OPERABLE status. If the channel cannot be returned to an OPERABLE status, action must be initiated within the same 48 hours to ensure that all rods are fully inserted, and the Rod Control System must be placed in a condition incapable of rod withdrawal within the next hour.

K.1 and K.2

Condition K applies to the following reactor trip Functions:

- Pressurizer Pressure - Low; 3
- Pressurizer Water Level - High; 3
- Reactor Coolant Flow – Low; 3
- Undervoltage RCPs and 3
- Underfrequency RCPs.

With one channel inoperable, the inoperable channel must be placed in the tripped condition within 72 hours (Ref. 8). For the Pressurizer Pressure - Low, Pressurizer Water Level - High, Undervoltage RCPs, and Underfrequency RCPs trip Functions, placing the channel in the tripped condition when above the P-7 setpoint results in a partial trip condition requiring only one additional channel to initiate a reactor trip. For the Reactor Coolant Flow - Low trip Function, placing the channel in the tripped condition when above the P-8 setpoint results in a partial trip condition requiring only one additional channel in the same loop to initiate a reactor trip. For the latter trip Function, two tripped channels in two RCS loops are required to 12 13

BASES

ACTIONS (continued)

initiate a reactor trip when below the P-8 setpoint and above the P-7 setpoint. These Functions do not have to be OPERABLE below the P-7 setpoint because there are no loss of flow trips below the P-7 setpoint. There is insufficient heat production to generate DNB conditions below the P-7 setpoint. The 72 hours allowed to place the channel in the tripped condition is justified in Reference 8. An additional 6 hours is allowed to reduce THERMAL POWER to below P-7 if the inoperable channel cannot be restored to OPERABLE status or placed in trip within the specified Completion Time.

Allowance of this time interval takes into consideration the redundant capability provided by the remaining redundant OPERABLE channel, and the low probability of occurrence of an event during this period that may require the protection afforded by the Functions associated with Condition K.

[The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 12 hours while performing routine surveillance testing of the other channels. The 12 hour time limit is justified in Reference 8.]

----------REVIEWER'S NOTE----------
The below text should be used for plants with installed bypass test capability:

The Required Actions are modified by a Note that allows placing one channel in bypass for up to 12 hours while performing routine surveillance testing. The 12 hour time limit is justified in Reference 8.

L.1 and L.2

Condition L applies to the RCP Breaker Position (Single Loop) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be restored to OPERABLE status within [6] hours. If the channel cannot be restored to OPERABLE status within the [6] hours, then THERMAL POWER must be reduced below the P-8 setpoint within the next 4 hours.

This places the unit in a MODE where the LCO is no longer applicable. This Function does not have to be OPERABLE below the P-8 setpoint because other RTS Functions provide core protection below the P-8 setpoint. The [6] hours allowed to restore the channel to OPERABLE

BASES

ACTIONS (continued)

S.1 and S.2

Condition S applies to the RTB Undervoltage and Shunt Trip Mechanisms, or diverse trip features, in MODES 1 and 2. With one of the diverse trip features inoperable, it must be restored to an OPERABLE status within 48 hours or the unit must be placed in a MODE where the requirement does not apply. This is accomplished by placing the unit in MODE 3 within the next 6 hours (54 hours total time). The Completion Time of 6 hours is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. With the unit in MODE 3, ACTION C would apply to any inoperable RTB trip mechanism. The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition P.

The Completion Time of 48 hours for Required Action S.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval.

SURVEILLANCE REQUIREMENTS

----------REVIEWER'S NOTE----------
In Table 3.3.1-1, Functions 11.a and 11.b were not included in the generic evaluations approved in either WCAP-10271, as supplemented, or WCAP-14333. In order to apply the WCAP-10271, as supplemented, and WCAP-14333 TS relaxations to plant specific Functions not evaluated generically, licensees must submit plant specific evaluations for NRC review and approval.

All changes are 1 unless otherwise noted

P

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the [P-9] interlock whenever the unit has been in MODE 3. This Surveillance is not required if it has been performed within the previous 31 days. Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the [P-9] interlock. 5

SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 15 (Ref. 14). Individual component response times are not modeled in the analyses.

The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core). 11

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured. ~~12~~

----------REVIEWER'S NOTE----------
Applicable portions of the following Bases are applicable for plants adopting WCAP-13632-P-A and/or WCAP-14036-P.

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 134 of 138

BASES

SURVEILLANCE REQUIREMENTS (continued)

Response time may be verified by actual response time tests in any series of sequential, overlapping or total channel measurements, or by the summation of allocated sensor, signal processing and actuation logic response times with actual response time tests on the remainder of the channel. Allocations for sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, onsite, or offsite (e.g., vendor) test measurements, or (3) utilizing vendor engineering specifications. WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," (Ref. 10) provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the WCAP. Response time verification for other sensor types must be demonstrated by test.

[WCAP-14036-P, Revision 1, "Elimination of Periodic Protection Channel Response Time Tests," (Ref. 15) provides the basis and methodology for using allocated signal processing and actuation logic response times in the overall verification of the protection system channel response time.] The allocations for sensor, signal conditioning, and actuation logic response times must be verified prior to placing the component in operational service and re-verified following maintenance that may adversely affect response time. In general, electrical repair work does not impact response time provided the parts used for repair are of the same type and value. Specific components identified in the WCAP may be replaced without verification testing. One example where response time could be affected is replacing the sensing assembly of a transmitter. 11 12

As appropriate, each channel's response must be verified every [18] months on a STAGGERED TEST BASIS. Testing of the final actuation devices is included in the testing. Response times cannot be determined during unit operation because equipment operation is required to measure response times. Experience has shown that these components usually pass this surveillance when performed at the 18 months Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.3.1.16 is modified by a Note stating that neutron detectors are excluded from RTS RESPONSE TIME testing. This Note is necessary because of the difficulty in generating an appropriate detector input signal. Excluding the detectors is acceptable because the principles of detector operation ensure a virtually instantaneous response.

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JUSTIFICATION FOR DEVIATIONS

ITS 3.3.1 BASES, REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

10. The Bases References have been changed to reflect the plant specific references. As such, when a reference has been deleted, the subsequent reference number has been changed.

11. Response Time testing has been deleted. See ITS 3.3.1 JFD 7 for justification for exclusion of Response Time testing.

INSERT 1

Enclosure (4 of 8), Q&A to Attachment 1, Volume 8 (Section 3.3) 136 of 138

INSERT 1

12. ISTS Table 3.3.1-1 Function 12 (Undervoltage RCPs) and 13 (Underfrequency RCPs) require three channels per bus. ITS Table 3.3.1-1 Function 12 (Undervoltage RCPs) and 13 (Underfrequency RCPs) trip functions require two channels per bus. Therefore, the statement in ISTS ACTION K bases which states that two tripped channels in two RCS loops are required to initiate a reactor trip when below the P-8 setpoint and above the P-7 setpoint has been deleted.

13. The statement in ISTS ACTION S (ITS ACTION R) which states that ACTION C applies when in MODE 3, is not retained in the KPS ITS. ISTS Table 3.3.1-1 Functions 20 (ITS Table 3.3.1-1 Function 18) and 21 (ITS Table 3.3.1-1 Function 19) clearly show that in MODES 3, 4 and 5 with the Rod Control System capable of rod withdrawal or one or more rods not fully inserted, the ACTION C shall be entered. Therefore, reiterating it in the ITS Bases for ITS ACTION R is not required.

Licensee Response/NRC Response/NRC Question Closure

Id	**1421**
NRC Question Number	**KAB-039**
Select Application	**NRC Question Closure**
Response Date/Time	
Closure Statement	**This question is closed and no further information is required at this time to draft the Safety Evaluation.**
Response Statement	
Question Closure Date	**1/4/2010**
Attachment 1	
Attachment 2	
Notification	**NRC/LICENSEE Supervision**
Added By	**Kristy Bucholtz**
Date Added	**1/4/2010 2:44 PM**
Modified By	
Date Modified	