WOLF CREEK
NUCLEAR OPERATING CORPORATION

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ET 01-0012

U. S. Nuclear Regulatory Commission
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Washington, D. C. 20555

Subject: Docket No. 50-482: Revision to Technical Specification 3.3.1, "Reactor Trip System Instrumentation," and Technical Specification 3.3.2, "Engineered Safety Feature Actuation System Instrumentation"

Gentlemen:

Wolf Creek Nuclear Operating Corporation (WCNOC) herewith transmits an application for amendment to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station (WCGS).

This amendment application would revise the Allowable Value for Technical Specifications (TS) Table 3.3.1-1, Function 8, "Pressurizer Pressure," and Table 3.3.2-1, Function 1.d, "Pressuizer Pressure - Low." The existing Tobar pressurizer pressure transmitters are being replaced with Rosemount transmitters during Refueling Outage XII.

The WCNOC Plant Safety Review Committee and the Nuclear Safety Review Committee have reviewed this amendment application. Attachments I through VI provide the required affidavit, description of proposed license changes and assessment, existing marked-up TS pages, revised TS pages, proposed Updated Safety Analysis Report (USAR) changes, and a summary of regulatory commitments made in this application. The proposed USAR changes identified in Attachment V are provided for information only.

WCNOC requests approval of the proposed license amendment by November 30, 2001, with the amendment being implemented prior to startup from Refueling Outage XII.

It has been determined that this amendment application does not involve a significant hazard consideration as determined per 10 CFR 50.92. Pursuant to 10 CFR 51.22(b), no environmental assessment need be prepared in connection with the issuance of this amendment.

A001

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Kansas State Official. If you should have any questions regarding this submittal, please contact me at (620) 364-4034, or Mr. Tony Harris at (620) 364-4038.

Very truly yours,

Richard A. Muench

RAM/rlr

Attachments:
- I - Affidavit
- II - Description and Assessment
- III - Markup of Technical Specification pages
- IV - Retyped Technical Specification pages
- V - Proposed USAR Changes (for information only)
- VI - List of Commitments

cc: V. L. Cooper (KDHE), w/a
J. N. Donohew (NRC), w/a
W. D. Johnson (NRC), w/a
E. W. Merschoff (NRC), w/a
Senior Resident Inspector (NRC), w/a

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Richard A. Muench, of lawful age, being first duly sworn upon oath says that he is Vice President Engineering and Information Services of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By _____
Richard A. Muench
Vice President Engineering and Information Services

SUBSCRIBED and sworn to before me this 22 day of March, 2001.

NOTARY PUBLIC STATE OF KANSAS
RHONDA L. RODGERS
My Appt. Exp. 5-11-2002

Rhonda L. Rodgers
Notary Public

Expiration Date 5-11-2002

ATTACHMENT II

DESCRIPTION AND ASSESSMENT

DESCRIPTION AND ASSESSMENT

1.0 INTRODUCTION

1.1 This proposed License Amendment Request (LAR) is a request pursuant to 10 CFR 50.90 to revise the Allowable Value for Technical Specifications (TS) Table 3.3.1-1, Function 8, "Pressurizer Pressure," and Table 3.3.2-1, Function 1.d, "Pressuizer Pressure - Low."

1.2 Updated Safety Analysis Report (USAR) Section

The changes to the USAR that are currently anticipated as a result of this LAR are provided in Attachment V. Changes to USAR Table 3.11(B)-3 are required to reflect the environmental qualifications of the replacement Rosemount transmitters.

2.0 DESCRIPTION

The proposed License Amendment would revise Technical Specifications (TS) Table 3.3.1-1, Function 8, "Pressurizer Pressure," and Table 3.3.2-1, Function 1.d, "Pressuizer Pressure - Low." Specifically, the amendment request proposes the following changes to TS Table 3.3.1-1 and Table 3.3.2-1:

Function	Current Allowable Value	Proposed Allowable Value
8.a. Pressurizer Pressure - Low	≥ 1931 psig	≥ 1930 psig
8.b. Pressurizer Pressure - High	≤ 2400 psig	≤ 2395 psig
1.d. Pressurizer Pressure - Low	≥ 1815 psig	≥ 1820 psig

3.0 BACKGROUND

The pressurizer pressure protection channel signals are used for high and low pressure protection and as inputs to the overtemperature ΔT trip protection function. Isolated output signals from these channels are used for pressure control. These are used to control pressurizer spray, pressurizer heaters, and power-operated relief valves. Pressurizer pressure is sensed by fast response pressure transmitters (Reference 7.1).

The pressurizer pressure transmitters (BB PT-0455, -0456, -0457, and -0458) are located inside containment and provide input to the Reactor Trip System and Engineered Safety Feature Actuation System instrumentation. The installed transmitters are Tobar model 32PA1 with an extended qualified life of 16.5 years, which would allow the use of the transmitters until Refueling Outage XII (Spring 2002). Similar qualified Tobar transmitters are no longer available

and has resulted in the need to find suitable qualified replacement transmitters for this application. The currently installed transmitters will be replaced with Rosemount Model 1154 transmitters.

Reactor Trip System Instrumentation

Four pressurizer pressure channels provide input to the Pressurizer Pressure - High and - Low trips and the Overtemperature ΔT trip. The pressurizer pressure channels are also used to provide input to the Pressurizer Pressure Control System; thus, the actuation logic must be able to withstand an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation.

The Pressurizer Pressure Low - trip Function ensures that protection is provided against violating the departure from nucleate boiling ratio (DNBR) limit due to low pressure. In MODE 1, when DNB is a major concern, the Pressurizer Pressure - Low trip must be OPERABLE. This trip Function is automatically enabled on increasing power by the P-7 interlock (Nuclear Instrumentation System power range P-10 or turbine impulse pressure greater than approximately 10% of full power equivalent (P-13)). On decreasing power, this trip Function is automatically blocked below P-7. Below the P-7 setpoint, there is insufficient heat production to generate DNB conditions.

The Pressurizer Pressure - High trip Function ensures that protection is provided against overpressurizing the Reactor Coolant System (RCS). The same sensors and transmitters used for the pressurizer low pressure trip are used for the high pressure trip, except that separate bistables are used for trip. This trip Function operates in conjunction with the pressurizer relief and safety valves to prevent RCS overpressure conditions.

The Pressurizer Pressure - High Allowable Value is selected to be below the pressurizer safety valve actuation pressure and above the power operated relief valve (PORV) setting. This setting minimizes challenges to safety valves while avoiding an unnecessary reactor trip for those pressure increases that can be controlled by the PORVs.

Engineered Safety Feature Actuation System Instrumentation

The Safety Injection - Pressurizer Pressure - Low signal provides protection against the following accidents :

- Inadvertent opening of a steam generator (SG) relief or safety valve;
- Steam Line Break;
- A spectrum of rod cluster control assembly ejection accidents (rod ejection);
- Inadvertent opening of a pressurizer relief or safety valve;
- Loss Of Coolant Accidents; and
- Steam Generator Tube Rupture.

The pressurizer pressure instrumentation provides both control and protection functions, with input to the Pressurizer Pressure Control System, reactor trip, and safety injection. Therefore, the actuation logic must be able to withstand both an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. Thus, four OPERABLE channels are required to satisfy the requirements with a two-out-of-four logic.

4.0 TECHNICAL ANALYSIS

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 Setpoints and Allowable Values.

The Trip Setpoints listed in the TS Bases and used in the bistables are based on the analytical limits stated in Chapter 15 of the USAR. 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 channels that must function in harsh environments as defined by 10 CFR 50.49, the Allowable Values specified in TS Table 3.3.1-1 and Table 3.3.2-1 in the accompanying Limiting Condition for Operation (LCO) are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Trip Setpoints is provided in TR 89-001, "Wolf Creek Nuclear Safety Analysis Setpoint Methodology for the Reactor Protection System." The explicit uncertainties are included in the new uncertainty calculation for replacement of the pressure transmitters. The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a CHANNEL OPERATIONAL TEST. Setpoints in accordance with the Allowable Value ensure that design limits are not violated during anticipated operational occurrences (and that the consequences of design basis accidents (DBAs) will be acceptable, providing the unit is operated from within the LCOs at the onset of the anticipated operational occurrence or DBA and the equipment functions as designed) (Reference 7.2).

The Allowable Values listed in TS Table 3.3.1-1 and Table 3.3.2-1 are based on the methodologies described in TR 89-001, which incorporate all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

The Allowable Value is obtained by adding or subtracting a calculated allowance from the nominal Trip Setpoint. This calculated allowance accounts for instrument error, process uncertainties such as flow stratification, and transport factor effects, etc. The nominal Trip Setpoint is the value set into the equipment and is obtained by adding or subtracting allowances such as instrument drift, rack calibration accuracy, and rack comparator setting accuracy from the safety analysis limit. The Safety Analysis Limit is the value assumed in the accident analysis. The nominal Trip Setpoint allows for the normal expected instrument drift such that the TS Trip Setpoint limits are not exceeded under normal operation.

As discussed above, the currently installed Tobar pressurizer pressure transmitters will be replaced with Rosemount transmitters during Refueling Outage XII. A revised calculation of the pressurizer pressure instrument uncertainty and TS values was performed in accordance with TR 89-001. This calculation resulted in the following changes to the Allowable Value:

Function	Current Allowable Value	Proposed Allowable Value
8.a. Pressurizer Pressure - Low	≥ 1931 psig	≥ 1930 psig
8.b. Pressurizer Pressure - High	≤ 2400 psig	≤ 2395 psig
1.d. Pressurizer Pressure - Low	≥ 1815 psig	≥ 1820 psig

The Allowable Value changes for Function 8.b., Pressurizer Pressure - High, and Function 1.d., Pressurizer Pressure - Low changed by 5 psig for the Rosemount transmitters because of the change in the errors accounted for in the uncertainty calculation. The controlling trigger ("T") value for the Rosemount transmitters was the value attributed to the process instrument loop calibration and drift uncertainties as had been the case for the Tobar transmitters.

The Allowable Value change for Function 8.a., Pressurizer Pressure - Low only changed by 1 psig for the Rosemount Transmitters. The reason for this small change is that, for the Tobar transmitters, the controlling "T" value was the value attributed to the sensor calibration and drift uncertainties and the parameters not evaluated on a periodic basis. For the Rosemount transmitters, the controlling "T" value changes to the value attributed to the process instrument loop calibration and drift uncertainties. This was due primarily to the smaller sensor drift term and the measurement and test equipment error term used in the Rosemount transmitter uncertainty calculation.

Since the methodology in TR 89-001 stipulates that the lesser of the "T" values, (i.e., most limiting) be used in the determination of the Allowable Value, the "T" value attributed to the process instrument loop calibration and drift uncertainties is the appropriate one to use.

The transmitter response time associated with the replacement Rosemount transmitters is ≤ 200 msec, which is the same response time for the Tobar transmitters. As such, the response time specified in the TS Bases Table B 3.3.1-2 is not changed.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Determination

WCNOC has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10 CFR 50.92(c) as discussed below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The existing safety related pressurizer pressure transmitters are being replaced with ones of similar characteristics and functions, and without changing the design or functional basis of the system, structure, or components associated with the pressure transmitters.

The protection system performance will remain within the bounds of the previously performed accident analysis. The Reactor Trip System (RTS) and Engineered Safety Feature Actuation System (ESFAS) instrumentation will continue to function in a manner consistent with the plant design basis. The replacement of the pressurizer pressure transmitters and proposed changes to the affected Allowable Values will not affect any of the analysis assumptions for any of the accidents previously evaluated, since the changes are consistent with the setpoint methodology and ensure adequate margin to the Safety Analysis Limit. The proposed changes will not affect any event initiators nor will the proposed changes affect the ability of any safety related equipment to perform its intended function. There will be no degradation in the performance of nor an increase in the number of challenges imposed on safety related equipment assumed to function during an accident situation. There will be no change to normal plant operating parameters or accident mitigation capabilities.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

A review of the failure modes and effects in Updated Safety Analysis Report Section 7.7.2 found that failure of the replacement pressure transmitters will be the same as for the existing pressure transmitters. As such, the effects of such failures on functions of the other equipment are concluded to be similar to those previously evaluated.

There are no changes in the method by which any safety related plant system performs its safety function. The normal manner of plant operation remains unchanged. The increase in the pressurizer pressure functions Allowable Values still provides acceptable margin between the nominal Trip Setpoint and Allowable Value. The changes in Allowable Value does not impact the systems capability to provide both control and protection functions. No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of the proposed changes.

Therefore, the proposed changes do not create a new or different kind of accident from any accident previously evaluated.

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

   Response: No

   The proposed changes do not affect the acceptance criteria for any analyzed event nor is there a change in any Safety Analysis Limit. There will be no effect on the manner in which safety limits or RTS and ESFAS settings are determined nor will there be any affect on those plant systems necessary to assure the accomplishment of protection functions.

   Therefore, the proposed changes do not involve a significant reduction in the margin of safety.

Based on the above evaluations, WCNOC concludes that the activities associated with the above described changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92 and accordingly, a finding by the NRC of no significant hazards consideration is justified.

5.2 Regulatory Safety Analysis

Applicable Regulatory Requirements/Criteria

The regulatory bases and guidance documents associated with the systems discussed in this amendment application include:

GDC-13 requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems.

GDC-20 requires that the protection system(s) shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

GDC-21 requires that the protection system(s) shall be designed for high functional reliability and testability.

GDC-22 through GDC-25 and GDC-29 require various design attributes for the protection system(s), including independence, safe failure modes, separation from control systems, requirements for reactivity control malfunctions, and protection against anticipated operational occurrences.

The principles described in IEEE Standard 379-1972 were used in the design of the Westinghouse protection system. The system complies with the intent of this standard and the additional guidance of Regulatory Guide 1.53, although the formal analyses have not been documented exactly as outlined. Westinghouse went beyond the required analyses and performed a fault tree analysis.

Conclusion

The replacement of the pressurizer pressure transmitters and changes to the Allowable values continues to be in conformance to the applicable GDC and IEEE Standards. Operation of the plant in accordance with the proposed changes will be in compliance with the above regulatory requirements.

6.0 ENVIRONMENTAL EVALUATION

WCNOC has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. WCNOC has evaluated the proposed change and has determined that the change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22 (c)(9). Therefore, pursuant to 10 CFR 51.22 (b), an environmental assessment of the proposed change is not required.

7.0 REFERENCES

7.1 USAR Section 7.2.2.3.3, "Pressurizer Pressure."

7.2 TS Bases B.3.3.1, "Reactor Trip System (RTS) Instrumentation," Background.

ATTACHMENT III

MARKUP OF TECHNICAL SPECIFICATION PAGES

Table 3.3.1-1 (page 2 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
6.	Overtemperature ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	Refer to Note 1 (Page 3.3-19)
7.	Overpower ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	Refer to Note 2 (Page 3.3-20)
8.	Pressurizer Pressure					
	a. Low	1(g)	4	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 1930 psig
	b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ 2395 psig
9.	Pressurizer Water Level - High	1(g)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 93.9% of instrument span
10.	Reactor Coolant Flow - Low	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 88.9%(m)
11.	Not Used.					
12.	Undervoltage RCPs	1(g)	2/bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 10355 Vac

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(g) Above the P-7 (Low Power Reactor Trips Block) interlock.
(m) % of design flow - 90,324 gpm.

Table 3.3.2-1 (page 1 of 5)
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
1.	Safety Injection					
	a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA
	b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.13	NA
	c. Containment Pressure - High 1	1,2,3	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 4.5 psig
	d. Pressurizer Pressure - Low	1,2,3(b)	4	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 1820 psig
	e. Steam Line Pressure Low	1,2,3(b)	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 571 psig(c)
2.	Containment Spray					
	a. Manual Initiation	1,2,3,4	2 per train, 2 trains	B	SR 3.3.2.8	NA
	b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
	c. Containment Pressure High - 3	1,2,3	4	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 28.3 psig

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(b) Above the P-11 (Pressurizer Pressure) interlock and below P-11 unless the Function is blocked.
(c) Time constants used in the lead/lag controller are $t_1 \geq 50$ seconds and $t_2 \leq 5$ seconds.

ATTACHMENT IV

RETYPED TECHNICAL SPECIFICATION PAGES

Table 3.3.1-1 (page 1 of 6)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.14	NA
	3(b), 4(b), 5(b)	2	C	SR 3.3.1.14	NA
2. Power Range Neutron Flux					
a. High	1,2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ 112.3% RTP
b. Low	1(c),2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.16	≤ 28.3% RTP
3. Power Range Neutron Flux Rate					
a. High Positive Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11	≤ 6.3% RTP with time constant ≥ 2 sec
b. High Negative Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤6.3% RTP with time constant ≥ 2 sec
4. Intermediate Range Neutron Flux	1(c), 2(d)	2	F,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 35.3% RTP
5. Source Range Neutron Flux	2(e)	2	I,J	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 1.6 E5 cps
	3(b), 4(b), 5(b)	2	J,K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11	≤ 1.6 E5 cps

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(b) With Rod Control System capable of rod withdrawal or one or more rods not fully inserted.
(c) Below the P-10 (Power Range Neutron Flux) interlock.
(d) Above the P-6 (Intermediate Range Neutron Flux) interlock.
(e) Below the P-6 (Intermediate Range Neutron Flux) interlock.

Table 3.3.1-1 (page 2 of 6)
Reactor Trip System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
6.	Overtemperature ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	Refer to Note 1 (Page 3.3-19)
7.	Overpower ΔT	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	Refer to Note 2 (Page 3.3-20)
8.	Pressurizer Pressure					
	a. Low	1(g)	4	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 1930 psig
	b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ 2395 psig
9.	Pressurizer Water Level - High	1(g)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ 93.9% of instrument span
10.	Reactor Coolant Flow - Low	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ 88.9%(m)
11.	Not Used.					
12.	Undervoltage RCPs	1(g)	2/bus	M	SR 3.3.1.9 SR 3.3.1.10 SR 3.3.1.16	≥ 10355 Vac

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(g) Above the P-7 (Low Power Reactor Trips Block) interlock.
(m) % of design flow - 90,324 gpm.

Table 3.3.2-1 (page 1 of 5)
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
1.	Safety Injection					
a.	Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA
b.	Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.13	NA
c.	Containment Pressure - High 1	1,2,3	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 4.5 psig
d.	Pressurizer Pressure - Low	1,2,3(b)	4	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 1820 psig
e.	Steam Line Pressure Low	1,2,3(b)	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 571 psig(c)
2.	Containment Spray					
a.	Manual Initiation	1,2,3,4	2 per train, 2 trains	B	SR 3.3.2.8	NA
b.	Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c.	Containment Pressure High - 3	1,2,3	4	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 28.3 psig

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(b) Above the P-11 (Pressurizer Pressure) interlock and below P-11 unless the Function is blocked.
(c) Time constants used in the lead/lag controller are $t_1 \geq 50$ seconds and $t_2 \leq 5$ seconds.

Table 3.3.2-1 (page 2 of 5)
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
3.	Containment Isolation					
	a. Phase A Isolation					
	(1) Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA
	(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.13	NA
	(3) Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
	b. Phase B Isolation					
	(1) Manual Initiation	1,2,3,4	2 per train, 2 trains	B	SR 3.3.2.8	NA
	(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
	(3) Containment Pressure - High 3	1,2,3	4	E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 28.3 psig
4.	Steam Line Isolation					
	a. Manual Initiation	1,2(i), 3(i)	2	F	SR 3.3.2.8	NA
	b. Automatic Actuation Logic and Actuation Relays	1,2(i), 3(i)	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
	c. Containment Pressure - High 2	1,2(i), 3(i)	3	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≤ 18.3 psig

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.
(i) Except when all MSIVs are closed.

ATTACHMENT V

PROPOSED USAR CHANGES

WOLF CREEK

TABLE 3.11(B)-3 (Sheet 15)

COMPONENT NUMBER	DESCRIPTION	LOCATION ROOM No.	SPEC. NUMBER	(4) SHUTDN H O T	SHUTDN C O L D	CATEGORY L O C A	CATEGORY M S L B	CATEGORY H E L B	NORM ENV	ACCIDENT ENVIRONMENT T	P	R	H	SP	
BBPI0406	REACTOR COOLANT PRESSURE INDICATOR	3601	ESE-14	X	X	D	D	D	T1	T2	T2	T2	T2	NA	
BBPI0406X	REACTOR COOLANT PRESSURE INDICATOR	1413	ESE-14	X	X	D	D	D	T1	T2	T2	T2	T2	NA	
BBPT0403	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1202	ESE-2D (13)	X	X	A	D	A	T1	F14	F31	T2	T2	NA	(9)
BBPT0403	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1202	ESE-1A	X	X	A	D	A	T1	F14	F31	T2	T2	NA	
BBPT0405	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1320	ESE-1B	X	X	A	D	A	T1	F18	F36	T2	T2	NA	
BBPT0405	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1320	ESE-1C	X	X	A	D	A	T1	F18	F36	T2	T2	NA	(9)
BBPT0406	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1202	ESE-1A	X	X	A	D	A	T1	F14	F31	T2	T2	NA	
BBPT0406	REACTOR COOLANT SYSTEM PRESSURE WIDE RANGE	1202	ESE-2D (13)	X	X	A	D	A	T1	F14	F31	T2	T2	NA	(9)
BBPT0455	PRESSURIZER PRESSURE TRANSMITTER	2201	ESE-1A	X	X	A	A	D	T1	F3	F6	T4	T2	T5	(9)
~~BBPT0456~~	~~PRESSURIZER PRESSURE TRANSMITTER~~	~~2201~~	~~ESE-1C~~	~~X~~	~~X~~	~~A~~	~~A~~	~~D~~	~~T1~~	~~F3~~	~~F6~~	~~T4~~	~~T2~~	~~T5~~	
BBPT0456	PRESSURIZER PRESSURE TRANSMITTER	2201	ESE-1C	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
~~BBPT0456~~	~~PRESSURIZER PRESSURE TRANSMITTER~~	~~2201~~	~~ESE-1A~~	~~X~~	~~X~~	~~A~~	~~A~~	~~D~~	~~T1~~	~~F3~~	~~F6~~	~~T4~~	~~T2~~	~~T5~~	~~(9)~~
BBPT0457	PRESSURIZER PRESSURE TRANSMITTER	2201	ESE-1C	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
~~BBPT0457~~	~~PRESSURIZER PRESSURE TRANSMITTER~~	~~2201~~	~~ESE-1A~~	~~X~~	~~X~~	~~A~~	~~A~~	~~D~~	~~T1~~	~~F3~~	~~F6~~	~~T4~~	~~T2~~	~~T5~~	~~(9)~~
BBPT0458	PRESSURIZER PRESSURE TRANSMITTER	2201	ESE-1A	X	X	A	A	D	T1	F3	F6	T4	T2	T5	(9)
~~BBPT0458~~	~~PRESSURIZER PRESSURE TRANSMITTER~~	~~2201~~	~~ESE-1C~~	~~X~~	~~X~~	~~A~~	~~A~~	~~D~~	~~T1~~	~~F3~~	~~F6~~	~~T4~~	~~T2~~	~~T5~~	
BBPV8702A	RHR PUMP SUCTION ISOLATION VALVE	2000	LIMITORQUE	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBPV8702B	RHR PUMP SUCTION ISOLATION VALVE	2000	LIMITORQUE	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0410A1	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0410A2	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0410A3	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0410B	RCS COLD LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0411A1	RCS HOT LEG RTD TEMP ELEMENT LOOP 1	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0411A2	RCS HOT LEG RTD TEMP ELEMENT LOOP 1	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0411A3	RCS HOT LEG RTD TEMP ELEMENT LOOP 1	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0411B	RCS COLD LEG RTD TEMP ELEMENT LOOP 1	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0413A	RCS HOT LEG RTD CONNECTOR (WR) LOOP 1	2201	HE-8	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0413A	RCS HOT LEG TEMPERATURE ELEMENT (WR) LOOP 1	2201	ESE-6	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0413B	RCS COLD LEG RTD CONNECTOR (WR) LOOP 1	2201	HE-8	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0413B	RCS COLD LEG TEMP ELEMENT (WR) LOOP 1	2201	ESE-6	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0420A1	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0420A2	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0420A3	RCS HOT LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0420B	RCS COLD LEG RTD TEMP ELE (INSTALLED SPARE)	2201	J-564			C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0421A1	RCS HOT LEG RTD TEMP ELEMENT LOOP 2	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0421A2	RCS HOT LEG RTD TEMP ELEMENT LOOP 2	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0421A3	RCS HOT LEG RTD TEMP ELEMENT LOOP 2	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0421B	RCS COLD LEG RTD TEMP ELEMENT LOOP 2	2201	J-564	X	X	C	A	D	T1	F3	F6	T4	T2	T5	
BBTE0423A	RCS HOT LEG RTD CONNECTOR (WR) LOOP 2	2201	HE-8	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0423A	RCS HOT LEG TEMP ELEMENT (WR) LOOP 2	2201	ESE-6	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0423B	RCS COLD LEG RTD CONNECTOR (WR) LOOP 2	2201	HE-8	X	X	A	A	D	T1	F3	F6	T4	T2	T5	
BBTE0423B	RCS COLD LEG TEMP ELEMENT (WR) LOOP 2	2201	ESE-6	X	X	A	A	D	T1	F3	F6	T4	T2	T5	

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LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation (WCNOC) in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Tony Harris, Manager Regulatory Affairs at Wolf Creek Generating Station, (316) 364-4038.

COMMITMENT	Due Date/Event
The amendment will be implemented prior to startup from Refueling Outage XII.	Prior to startup from Refueling Outage XII