Ameren MISSOURI

Callaway Plant

August 6, 2012

ULNRC-05888

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

10 CFR 50.90

Ladies and Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
PERTAINING TO REVISION OF TECHNICAL SPECIFICATION (TS) 3.3.6,
"CONTAINMENT PURGE ISOLATION INSTRUMENTATION",
LDCN 09-0040 (TAC No. ME7205)

References:
1. Ameren Missouri Letter ULNRC-05654, "License Amendment Request: Proposed Revision to Technical Specification 3.3.6, 'Containment Purge Isolation Instrumentation,' (LDCN 09-0040)," dated September 22, 2011
2. Electronic Request for Additional Information (RAI) from NRC dated July 6, 2012 (ADAMS - Pkg: ML 121880609, Email: ML 121880613, RAIs: ML121880617)

Ameren Missouri (Union Electric Company) submitted a request for an amendment to Facility Operating License Number NPF-30 for Callaway Plant, per Reference 1. The proposed amendment would revise Required Action B.1 of TS 3.3.6, "Containment Purge Isolation Instrumentation," such that a Note would be added to the Required Action to conditionally allow containment mini-purge supply and exhaust valves that have been closed in accordance with the Action to be opened under administrative controls as required for certain operational needs.

Following NRC receipt of Reference 1, the NRC staff has identified the need for additional information to support their continued review. On June 14, 2012, a teleconference was held between Callaway Plant staff and NRC staff to further clarify the requests for additional information. Subsequently, formal requests for additional information (RAIs) were transmitted via e-mail to the Callaway Plant staff on July 6, 2012 (Reference 2). The e-mail contained seven (7) specific requests. Responses to the specific requests are hereby provided in an Enclosure 1 to this letter.

It should be noted that in response to the requests for additional information and from the clarification teleconference discussion, revisions to the TS and TS Bases markups originally proposed and submitted via Reference 1 are required. Enclosure 2 provides the revised TS markups. These markups supersede the corresponding marked-up TS pages provided in Attachment 2 of Reference 1. Enclosure 3 provides the revised TS Bases markups. These markups supersede the corresponding marked-up TS Bases pages provided in Attachment 3 of Reference 1. The TS Bases markups are provided for information only, and the final TS Bases markups will be processed under the program for updates per TS 5.5.14, "Technical Specifications Bases Control Program," at the time this amendment is implemented.

It has been determined that the proposed revisions to TS 3.3.6 and TS 3.3.6 Bases remain bounded by the significant hazards consideration submitted in Reference 1 and therefore do not involve a significant hazards consideration as determined by 10 CFR 50.92. Further, as concluded in Reference 1, an environmental assessment need not be prepared pursuant to 10 CFR 51.22(b).

This revision to the amendment application was reviewed by the Onsite Review Committee and the Nuclear Safety Review Board. In accordance with 10 CFR 50.91, a copy of this amendment application, including the attachments, is being provided to the designated Missouri State official.

In addition, similar to the original amendment request, there are no new regulatory commitments identified or contained in this letter or its enclosures.

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

Sincerely,

Executed on: 8/6/2012

Scott A. M

Scott A. Maglio
Regulatory Affairs Manager

DJW/nls

Enclosures:
1. Responses to NRC Requests for Additional Information
2. Revised TS mark-ups
3. Revised TS Bases mark-ups

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Responses to NRC Requests for Additional Information

1) Based on the information in Section 3.3, "ITS Conversion," of Attachment 1 to the LAR, the NRC staff understands that the ability to vent the containment in order to maintain containment pressure within the required limits was impacted at Callaway Plant Unit 1 since 1999. The plant had operated under this limitation imposed by TS 3.3.6 for the past 12 years. The staff would like to have a better understanding of how this limitation has impacted the ability to vent the containment. Please provide additional information about the venting frequency and how often the need to vent containment does actually coincide with Action entries related to TS 3.3.6. Also, please clarify if the limitation ever led to a plant shutdown, and if so, please clarify how many plant shutdowns actually occurred in the period since 1999 that can be attributed to this limitation.

Response:

The change proposed in this amendment application would add a Note to Required Action B.1 of TS 3.3.6 to conditionally allow the containment mini-purge valves that have been closed to satisfy Required Action B.1 to be opened under administrative controls. With one radiation monitoring channel inoperable during applicable MODES, Condition A of TS 3.3.6 applies, and Required Action A.1 requires the affected radiation monitoring channel to be restored to Operable status within four hours. If this Completion Time is not met, or if both radiation monitoring channels are inoperable, or if one or more Table 3.3.6-1 Functions with one or more manual channels or automatic actuation trains is inoperable, then Condition B applies, and per Required Action B.1 the containment purge supply and exhaust valves must be immediately placed and maintained in the closed position. If the mini-purge supply and exhaust valves are closed per TS 3.3.6 Required Action B.1, there is currently no provision to open them under administrative controls to allow the containment to be vented, for example, in order to maintain containment pressure within limits. In this case, there could be a risk of plant shutdown as required by TS 3.6.4, "Containment Pressure."

For twelve (12) years (since 1999), Callaway Plant has operated with this operational constraint. At Callaway Plant, the containment is typically vented every three (3) to four (4) days. A typical venting takes approximately one (1) hour to perform.

To date the plant has never been required to be shut down per TS 3.6.4, nor has the plant entered a shutdown sequence due to the operational limitation. However, at least once in the past, operational requirements have caused the plant to approach the shutdown Action associated with TS 3.6.4. This event occurred on March 26, 2008 and is documented in the Callaway Corrective Action program. Because this has been an ongoing operational limitation, the proposed license amendment is requested. The following Tables identify the out-of-service occurrences for the containment mini-purge radiation monitors in the past five years.

RADIATION MONITOR GTRE0022
FIVE YEAR OUT- OF- SERVICE HISTORY (1)(2)

OCCURRENCE	INOPERABLE DATE	OUT-OF-SERVICE DURATION (Hours)	DESCRIPTION
1	3/23/2008	73	GTRE0022 out of service to replace vacuum transducer with new Rosemount transmitter
2	2/19/2009	8	CPIS Actuation Instrumentation inoperable due to loss of power supply
3	2/28/2009	6	Replace Channel 1 ESFAS power supplies
4	9/2/2009	19	While making alignments for containment vent, GTRE0022 experienced loss of flow
5	3/2/2010	37	GTRE0022 failure due to loss of flow
6	2/22/2011	38	GTRE0022 taken out of service greater than one shift while performing procedure ISL-GT-0R22 (A Train Channel Calibration)
7	12/21/2011	20	GTRE0022 gas channel failed Source Check

(1) These times do not include brief times for occasional loss of flow conditions such as for periodic filter replacement.
(2) Table also includes ESFAS out-of-service times which rendered CPIS unavailable.

RADIATION MONITOR GTRE0033
FIVE YEAR OUT- OF- SERVICE HISTORY(1)(2)

OCCURRENCE	INOPERABLE DATE	OUT-OF-SERVICE DURATION (Hours)	DESCRIPTION
1	10/25/2007	10	GTRE0033 out of service for procedure ISL-GT-00R33 (B Train Channel Calibration).
2	8/26/2008	14	GTRE0033 out of service to replace sample pump and motor.
3	8/24/2009	83	GTRE0033 out of service for RM-80 modification and vaccum transducer replacement.
4	5/4/2009	7	GTRE0033 out of service for breaker (NG02BAR131) test/swap.
5	3/15/2010	36	GTRE0033 out of service for calibration.
6	1/11/2011	41	GTRE0033 inoperable. Sample pump would not start following filter change out.

(1) These times do not include brief times for occasional loss of flow conditions such as for periodic filter replacement.
(2) Table also includes ESFAS out-of-service times which rendered CPIS unavailable.

As can be seen from the Tables, the purge monitors are routinely removed from service during plant operation. Out-of-service times of up to 73 hours for GTRE0022 and 83 hours for GTRE0033 are shown on the Tables. Given that the containment is required to be vented every three to four days, there is a more than a negligible probability that a need for containment venting will occur during or around the time a purge monitor is out-of-service. If the out-of-service time is needed for periodic testing or for repair of the purge monitor(s), there is a possibility that the 4-hour Completion Time of TS 3.3.6 Required Action A.1 would be exceeded, thus requiring the containment mini-purge supply and exhaust valves to be closed.

As noted in the license amendment application (Reference 1 in the cover letter), TS 3.6.3, "Containment Isolation Valves," and TS 3.9.4, "Containment Penetrations," allow unisolating flow paths containing the containment mini-purge supply and exhaust valves (i.e., opening the individual valves) under administrative controls during certain operational needs, if the valves have been closed to satisfy an Action under either of those Technical Specifications due to inoperability of one or more of the valves themselves. In addition, Surveillance Requirement 3.6.3.2 for TS 3.6.3 requires "verifiying that each mini-purge valve is closed, except when the containment mini-purge valves are open for pressure control ...." This supports the intent that the mini-purge valves may be opened under administrative controls when containment and operational conditions require it.

2) Please describe how often the containment is vented and how long the mini-purge system is operated during a typical venting event in MODES 1, 2, 3, and 4.

Response:

As described in the response to Item (1), at Callaway Plant the containment is typically vented every three (3) to four (4) days. Venting itself takes approximately one (1) hour, but the overall evolution typically takes approximately two (2) hours to complete due to job preparation, job briefs, lineups, etc.

The plant has never been required to shut down, nor has the plant entered a shutdown sequence due to the operational limitation. However, at least once in the past, operational requirements have caused the plant to approach the shutdown action.

3) Table 3.3.6-1 of TS 3.3.6 contains a total of four (4) functions related to Containment Purge Isolation instrumentation. The NRC staff understands that the request for TS amendment is limited to the inoperability of Function 3 only in TS Table 3.3.6-1. However, the proposed insert TS-1 to TS page 3.3-60 could be understood to mean that amendment can be applied during inoperability of Function 1 also. The discussion provided in the last paragraph of LAR Section 3.5, "Technical Analysis," appears to imply that the mini-purge valves could be opened when both Functions 1 and 3 are inoperable, please clarify the intent of the proposed note.

Response:

As proposed, the Note would allow the mini-purge valves to be administratively opened with Function 1 and/or Function 3 inoperable because the Note only requires Functions 2 and 4 to be operable. The Note credits administrative controls that require a dedicated operator in the Control Room to close the containment mini-purge isolation valves if needed.

Because the containment mini-purge isolation valves are air-operated valves, there are no local controls for closing the valve other than by manually bleeding air off the actuator. Therefore, the dedicated operator is required to be in the Control Room and not locally at the valves.

The administrative control requires Operability of the circuitry needed to manually close the valves from the Control Room. Since the TS Bases define "Administrative Controls" as having the capability for a "designated control room operator to rapidly close the valves when a need for system isolation is indicated," this requires manual isolation capability (from the Control Room) to be available, by definition. Manual closure of the valves may be accomplished by closing the containment purge isolation handswitches (SAHS0011 or SAHS0015), which provide actuation for Function 1) or by closing each individual containment mini-purge isolation valve handswitch. This requires closing all of the containment mini-purge isolation valve handswitches (GTHIS0005, GTHIS0012, GTHIS0004, and GTHIS0011). The circuitry for the containment purge isolation handswitches is designed with cross-train trip capability such that either GTRE0022 or GTRE0033 will close all four mini-purge valves. Closure of the valves can thus be accomplished from the Control Room without the operability of TS Table 3.3.6-1 Function 1.

It should also be noted that during MODES 1- 4 (the applicable Modes for Condition B), neither Function 1 nor Function 3 performs a credited function with respect to the accident analyses. There are no accident analyses or dose calculations that rely on the instrumentation in Function 3. Function 1 is only required during CORE ALTERATIONS or during movement of irradiated fuel inside containment. Inoperability of Function 1 is covered by Condition C to which the proposed Note does not apply. Function 1 is required as a manual backup in MODES 1- 4 to the automatic CIS-A isolation.

4) LAR Insert TSB-1 to the TS Bases references the minimum containment pressure analysis for emergency core cooling system (ECCS) performance capability, as described in the FSAR, and the effect of having the containment mini-purge system in operation at the onset of the most limiting case (i.e., a double ended cold leg guillotine break). Please clarify if this is a new analysis performed in support of the proposed TS change, or if it is an existing analysis. If it is a new analysis, the NRC staff may need to review it.

Response:

The discussion included in Insert TSB-1 is is intended to be provided as additional information for inclusion in the TS 3.3.6 Bases, i.e., Applicable Safety Analysis section. The described minimum containment pressure analysis was not performed in support of the proposed TS change, as it has

been described in FSAR Section 6.2.1.5 since initial licensing of the facility. The additional text is being added to provide a more complete description of the basis for the response time limit associated with automatic purge isolation capability. This addition is being made in conjunction with the changes needed in support of the license amendment request, but is not directly part of those changes.

5) LAR Insert TSB-2 to the TS Bases provides a discussion of administrative controls consisting of a designated control room operator to rapidly close the valves when a need for system isolation is indicated. Please provide additional information on the administrative controls in support of the proposed change including what other means are available for system isolation given that Function 3 isolation instrumentation is inoperable. Please clarify if the administrative controls consist of designating a control room operator only or if they include a dedicated operator(s) locally at the valves.

Response:

The proposed Note to TS Required Action B.1 is only applicable under conditions where the automatic actuation circuitry for mini-purge system isolation is available. Because the containment mini-purge system is assumed to isolate in eleven (11) seconds after large break LOCA initiation, maintaining the automatic actuation circuitry ensures the required system response time is met.

The administrative controls consist of designating a control room operator to rapidly close the valves when a need for system isolation is indicated. Because the containment mini-purge isolation valves are air-operated solenoid valves, there are no local controls for closing the valve other than by manually bleeding air off the actuator. Therefore, the dedicated operator needed for administrative controls is required to be vigilant in the control room and not locally at the valve.

As noted previously, the administrative control requires Operability of the circuitry needed to manually close the valves from the Control Room. Manual closure of the valves may be accomplished by closing the containment purge isolation handswitches (SAHS0011 or SAHS0015, which provide actuation for Function 1) or by closing each individual containment mini-purge isolation valve handswitch. This requires closing all of the containment mini-purge isolation valve handswitches (GTHIS0005, GTHIS0012, GTHIS0004, and GTHIS0011). By design, either GTRE0022 or GTRE0033 will close all four mini-purge valves. Closure of the valves can be accomplished from the Control Room without the operability of TS Table 3.3.6-1 Function 1.

In summary, should an accident occur while the radiation monitors are inoperable, the containment purge isolation signal will effect automatic purge system isolation via the containment isolation Phase A signal. As a backup to the automatic isolation function, purge system isolation can still be effected manually. Manual isolation capability is maintained in the event that the mini-purge isolation valves are open under administrative controls, since the dedicated operator in the control room will be alerted by high containment pressure conditions to close the isolation valves.

6) Please explain if there are any dose calculations or accident evaluations (e.g., design basis accidents or other events evaluated in FSAR) that rely on the functioning of the instrumentation in Function 3 of Table 3.3.6-1 of TS 3.3.6, and if there are some, provide justification for the proposed change.

Response:

There are no dose calculations or accident analyses that rely on the functioning of the instrumentation in Function 3 of Table 3.3.6-1 of TS 3.3.6. Radiation monitors GTRE0022 and GTRE0033 have no credited or required automatic response time limit.

7) The proposed change does not appear to be consistent with the corresponding TS 3.6.3, "Containment Isolation Valves," that included the following Note 1 for similar situations:

> Penetration flow path(s) except for containment shutdown purge valve flow paths may be unisolated intermittently under administrative controls.

Please clarify whether a similar note should be included in the proposed change to TS 3.3.6.

Response:

In response to this request for additional information and the discussion concluded during the June 14, 2012 clarification teleconference, revisions to the TS and TS Bases markups originally proposed and submitted via Reference 1 are being made. The revised TS and Bases markups thus reflect a Note similar to that which appears in TS 3.6.3 as referenced in the above request. The word "intermittently" is now being included in the proposed Note for TS 3.3.6.

Revised TS Markup:

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

Containment mini-purge supply and exhaust valves closed to satisfy Required Action B.1 may be opened intermittently under administrative controls, provided Table 3.3.6-1 Functions 2 and 4 are OPERABLE.

Revised TS 3.3.6 Bases Markup:

INSERT TSB-2

Required Action B.1 is modified by a Note to allow containment mini-purge supply and exhaust valves that have been closed to satisfy Required Action B.1 to be opened intermittently under administrative controls, provided Table 3.3.6-1 Functions 2 and 4 are OPERABLE. Opening these valves allows the containment to be vented for pressure control when necessary. The administrative controls consist of designating a control room operator to rapidly close the valves (or verify that they are automatically closed) when a need for system isolation is indicated. With containment purge radiation monitoring instrumentation inoperable, the provision requiring OPERABILITY of Table 3.3.6-1 Functions 2 and 4 ensures that the mini-purge supply and exhaust valves can be automatically closed by the Phase A isolation signal.

ENCLOSURE 2
to ULNRC-05888

REVISED TS 3.3.6 MARKUPS

" NO CHANGE TO THIS PAGE
INFORMATION ONLY "

3.3 INSTRUMENTATION

3.3.6 Containment Purge Isolation Instrumentation

LCO 3.3.6 The Containment Purge Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

---------- NOTE ----------
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	4 hours

(continued)

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INSERT TS-1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------- NOTE ---------- Only applicable in MODE 1, 2, 3, or 4. ---------- One or more Functions with one or more manual channels or automatic actuation trains inoperable. OR Both radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Place and maintain containment purge supply and exhaust valves in closed position.	Immediately

(continued)

INSERT TS-1

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

Containment mini-purge supply and exhaust valves closed to satisfy Required Action B.1 may be opened intermittently under administrative controls, provided Table 3.3.6-1 Functions 2 and 4 are OPERABLE.

"NO CHANGES
INFORMATION ONLY"

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. ---------- NOTE ---------- Only applicable during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. ----------	C.1	Place and maintain containment purge supply and exhaust valves in closed position.	Immediately
	OR		
One or more manual channels inoperable.	C.2	Enter applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment purge supply and exhaust valves made inoperable by isolation instrumentation.	Immediately

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TABLE 3.3.6-1 (PAGE 1 OF 1)
Containment Purge Isolation Instrumentation

"NO CHANGES INFORMATION ONLY"

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	NOMINAL TRIP SETPOINT
1.	Manual Initiation	1, 2, 3, 4, (a), (b)	2	SR 3.3.6.4	NA
2.	Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	1, 2, 3, 4	2 trains	SR 3.3.6.2 SR 3.3.6.6	NA
3.	Containment Purge Exhaust Radiation - Gaseous	1, 2, 3, 4	2	SR 3.3.6.1 SR 3.3.6.3 SR 3.3.6.5	(c)
4.	Containment Isolation - Phase A	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 3.a, for all initiation functions and requirements.			

(a) During CORE ALTERATIONS.
(b) During movement of irradiated fuel assemblies within containment.
(c) Set to ensure ODCM limits are not exceeded.

ENCLOSURE 3
to ULNRC-05888

REVISED TS 3.3.6 BASES MARKUPS

B 3.3 INSTRUMENTATION

"NO CHANGES INFORMATION ONLY"

B 3.3.6 Containment Purge Isolation Instrumentation

BASES

BACKGROUND

The containment purge system includes two subsystems: the shutdown purge system and the mini-purge system. Containment purge isolation instrumentation closes the containment isolation valves in the mini-purge system and the shutdown purge system. This action isolates the containment atmosphere from the environment to minimize releases of radioactivity in the event of an accident. The mini-purge system is typically used during reactor operation, but may have limited use during plant conditions other than reactor operation. The shutdown purge system is used when the reactor is shutdown.

Containment purge isolation initiates on an automatic or manual safety injection (SI) signal through the Containment Isolation - Phase A Function, or by manual actuation of Phase A Isolation. The Bases for LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," discuss these modes of initiation.

Two gaseous radiation monitoring channels are also provided as input to the containment purge isolation. The two channels measure gaseous radiation in a sample of the containment purge exhaust. Since the purge exhaust monitors constitute a sampling system, various components such as sample line valves and sample pumps are required to support monitor OPERABILITY.

Each of the purge systems has inner and outer containment isolation valves in its supply and exhaust ducts. A high radiation signal from either of the two radiation monitoring channels initiates containment purge isolation, which closes both inner and outer containment isolation valves in the Mini-purge System and the Shutdown Purge System. These systems are described in the Bases for LCO 3.6.3, "Containment Isolation Valves."

APPLICABLE SAFETY ANALYSES

The safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event. The isolation of the containment mini-purge isolation valves has not been analyzed mechanistically in the fuel handling accident (reactor building case) dose calculations, although rapid isolation is assumed. The containment purge isolation gaseous radiation channels act as backup to the Phase A isolation signal to ensure closing of the purge supply and exhaust valves.

(continued)

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BASES

APPLICABLE SAFETY ANALYSES (continued)

In the postulated fuel handling accident, the dose calculations performed in support of Reference 5 (for allowing the personnel airlock to be open during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment) do not assume automatic containment purge isolation. (See also the Bases for LCO 3.9.4, "Containment Penetrations.") Containment isolation ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits.

Containment mini-purge isolation has been analyzed mechanistically (isolation within 11 seconds) in the large break LOCA dose calculations (Reference 6). INSERT TSB-1

The containment purge isolation instrumentation satisfies Criterion 3 of 10CFR50.36(c)(2)(ii).

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment Purge Isolation, listed in Table 3.3.6-1, is OPERABLE.

1. Manual Initiation

The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two push buttons in the control room.

(SAH50011, SAH50015)

The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.

Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet as well as the BOP ESFAS output actuation relays needed to effect a manual containment purge isolation.

2. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)

The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation of containment purge isolation.

(continued)

INSERT TSB-1

Automatic isolation of the containment mini-purge valves is also assumed in the minimum containment pressure analysis for ECCS performance capability, as described in the FSAR (Reference 7). The effect of having the containment mini-purge system in operation at the onset of the most limiting case (i.e., a double-ended cold leg guillotine break), followed by assumed automatic isolation of the containment purge exhaust and supply lines, is addressed in the analysis by increasing the assumed containment volume. Consequently, the response time (11 seconds) assumed for the automatic isolation of the mini-purge system determines the adjustment made to the containment volume in the analysis.

LCO (continued)

2. Automatic Actuation Logic and Actuation Relays (BOP ESFAS) (continued)

Automatic Actuation Logic and Actuation Relays (BOP ESFAS) consist of the same features and operate in the same manner as described for ESFAS Function 6.c, Auxiliary Feedwater.

3. Containment Purge Exhaust Radiation - Gaseous

The LCO specifies two required Containment Purge Exhaust Radiation – Gaseous channels (GTRE0022 and GTRE0033) to ensure that the radiation monitoring instrumentation necessary to initiate Containment Purge Isolation remains OPERABLE.
For sampling systems, channel OPERABILITY involves more than OPERABILITY of the channel electronics. OPERABILITY also requires correct valve lineups and sample pump operation, as well as detector OPERABILITY, since these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

4. Containment Isolation - Phase A

Containment Purge Isolation is also initiated by all Table 3.3.2-1 Functions that initiate Containment Isolation - Phase A. Therefore, the requirements are not repeated in Table 3.3.6-1. Instead, refer to LCO 3.3.2, Function 3.a, for all initiating Functions and requirements.

APPLICABILITY

The Manual Initiation, Automatic Actuation Logic and Actuation Relays (BOP ESFAS), and Containment Purge Exhaust Radiation - Gaseous Functions are required OPERABLE in MODES 1, 2, 3, and 4. The Containment Isolation – Phase A Function is required to be OPERABLE as directed by LCO 3.3.2, Function 3.a. The Containment Purge Manual Initiation Function, is also required OPERABLE during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. During CORE ALTERATIONS or during movement of irradiated fuel assemblies within containment, automatic actuation functions of the containment purge isolation gaseous radiation channels are not required to be OPERABLE.

The automatic actuation logic and actuation relays for the Containment Purge Exhaust Radiation – Gaseous channels (GTRE0022 and

(continued)

BASES

ACTIONS

A.1 (continued)

likelihood of events occurring during this interval, and recognition that the remaining channel will respond.

B.1

Condition B applies to all Containment Purge Isolation Functions and addresses the train orientation of the BOP ESFAS actuation logic and actuation relays for these Functions. It also addresses the failure of both gaseous radiation monitoring channels, or the inability to restore a single failed gaseous radiation monitoring channel to OPERABLE status in the time allowed for Required Action A.1.

If one or more trains or manual initiation channels are inoperable, both gaseous radiation monitoring channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action to place and maintain containment purge supply and exhaust valves in their closed position is met.

A Note is added stating that Condition B is only applicable in MODE 1, 2, 3, or 4.

INSERT TSB-2

C.1 and C.2

Condition C applies to the Manual Initiation Function. If one or more manual initiation channels are inoperable, operation may continue as long as the Required Action to place and maintain containment purge supply and exhaust valves in their closed position is met or the applicable Conditions of LCO 3.9.4, "Containment Penetrations," are met for each valve made inoperable by failure of isolation instrumentation. The Completion Time for these Required Actions is Immediately.

A Note states that Condition C is applicable during CORE ALTERATIONS or during movement of irradiated fuel assemblies within containment.

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.6-1 determines which SRs apply to which Containment Purge Isolation Functions.

(continued)

INSERT TSB-2

Required Action B.1 is modified by a Note to allow containment mini-purge supply and exhaust valves that have been closed to satisfy Required Action B.1 to be opened intermittently under administrative controls, provided Table 3.3.6-1 Functions 2 and 4 are OPERABLE. Opening these valves allows the containment to be vented for pressure control when necessary. The administrative controls consist of designating a control room operator to rapidly close the valves (or verify that they are automatically closed) when a need for system isolation is indicated. With containment purge radiation monitoring instrumentation inoperable, the provision requiring OPERABILITY of Table 3.3.6-1 Functions 2 and 4 ensures that the mini-purge supply and exhaust valves can be automatically closed by the Phase A isolation signal.

LDCN 09-0040

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.6 (continued)

reliability, and plant risk and is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. 10 CFR 100.11.
2. NUREG-1366, July 22, 1993.
3. FSAR Table 16.3-2.
4. Callaway OL Amendment No. 20 dated April 10, 1987.
5. Callaway OL Amendment No. 114 dated July 15, 1996.
6. FSAR Section 15.6.5.4.1.4.
7. FSAR Section 6.2.1.5.