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CENG
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CALVERT CLIFFS
NUCLEAR POWER PLANT

January 13, 2014

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
License Amendment Request: Add Technical Specification for Atmospheric Dump Valves

REFERENCES:
(a) NUREG 1432, Revision 4, Standard Technical Specifications Combustion Engineering Plants, March 2012
(b) NRC Administrative Letter 98-10, Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety, December 29, 1998

In accordance with 10 CFR 50.90, Calvert Cliffs Nuclear Power Plant, LLC is submitting a request for an amendment to add a Technical Specification for the Atmospheric Dump Valves. This Technical Specification change request is modeled on Technical Specification 3.7.4, Atmospheric Dump Valves (ADVs), contained in Reference (a). Deviations from Reference (a) are based on plant specific design differences and are described in Attachment (1).

This amendment is being submitted in conformance with Reference (b). Following review of the basis for atmospheric dump valve use in the accident analyses and in the emergency operating procedures, we have determined that the atmospheric dump valves meet the requirements of 10 CFR 50.36(c)(2)(ii) for inclusion in the Technical Specifications. Therefore, they are required to be addressed in the Technical Specifications. As discussed in Reference (b), we consider this lack of a Technical Specification to be a degraded or non-conforming condition and have imposed appropriate administrative controls. We have created a Technical Requirements Manual section for the atmospheric dump valves which mimics this proposed Technical Specification change. This Technical Requirements Manual control will remain in place until this request is dispositioned.

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Attachment (1) provides a description and assessment of the proposed change. Attachment (2) contains the proposed new Technical Specification. The associated Technical Specification Bases are provided for information in Attachment (3).

Calvert Cliffs Nuclear Power Plant requests approval of the proposed license amendment by September 1, 2014. A 60 day implementation time is requested to allow for implementation of the supporting procedures. Continued plant operation is not dependent on this change.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Maryland Official.

There are no regulatory commitments contained in this letter.

Should you have questions regarding this matter, please contact Mr. Douglas E. Lauver at (410) 495-5219.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 13, 2014.

Very truly yours,

GHG/PSF/bjd

Attachments: (1) Description and Assessment of Proposed Changes
(2) Proposed New Technical Specification
(3) Proposed New Technical Specification Bases

cc: NRC Project Manager, Calvert Cliffs
NRC Regional Administrator, Calvert Cliffs
Resident Inspector, NRC
S. Gray, MD-DNR

ATTACHMENT (1)

DESCRIPTION AND ASSESSMENT OF PROPOSED CHANGES

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1.0 SUMMARY DESCRIPTION

Calvert Cliffs Nuclear Power Plant, LLC is submitting a request for an amendment to add a Technical Specification (TS) for the Atmospheric Dump Valves (ADVs). This TS change request is modeled on TS 3.7.4, Atmospheric Dump Valves (ADVs), contained in Reference 1. Deviations from Reference 1 are based on plant specific design differences and are described below.

This amendment is being submitted in conformance with Reference 2. Following review of the basis for ADV use in the accident analyses and in the emergency operating procedures, we have determined that the ADVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii). Therefore, they are required to be addressed in the TSs. As discussed in Reference 2, we consider this lack of a TS to be a degraded or non-conforming condition and have imposed appropriate administrative controls. We have created a Technical Requirements Manual section for the ADVs which mimics this proposed TS change. This Technical Requirements Manual control will remain in place until this request is dispositioned.

2.0 DETAILED DESCRIPTION

Proposed Technical Specification

Technical Specifications are needed for structures, systems, or components that meet the criteria in 10 CFR 50.36(c)(2)(ii). Criterion 3 of this regulation requires, "A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure or presents a challenge to the integrity of a fission product barrier" have a TS.

The ADVs are part of the primary success path for cooldown of the Unit following a steam generator tube rupture (SGTR). In a SGTR, the fission product barrier [the Reactor Coolant System (RCS)] is assumed to be failed. Therefore, the ADVs meet 10 CFR 50.36(c)(2)(ii) Criterion 3 and should be included in the TSs. The proposed TS is based on NUREG-1432 (Reference 2) and is modified based on plant specific design features.

Attachment (2) contains the proposed new TS. It states that two ADV lines shall be operable in Modes 1, 2, 3, and 4 (when the steam generator is being relied upon for heat removal). The proposed Actions address Conditions where one ADV line is inoperable and when two ADV lines are inoperable. For one ADV line inoperable, a Completion Time of 48 hours is established to restore the ADV line to operable status. For two ADV lines inoperable, a Completion Time of 1 hour is established to restore at least one ADV line to operable status. If those Required Actions and Completion Times are not met, the Unit would have to be in Mode 3 in 6 hours and Mode 4 on shutdown cooling in 24 hours. A Surveillance Requirement (SR) is also proposed to require one complete cycle of each ADV once every 24 months (refueling interval).

The associated Technical Specification Bases are provided for information in Attachment (3).

To support this proposed change, additional information concerning the use of ADVs in the accident analyses presented in the Updated Final Safety Analysis Report (UFSAR) and other plant specific information is described below.

3.0 TECHNICAL EVALUATION

System Description

The steam dump and bypass system is used to rapidly remove RCS stored energy and to limit secondary steam pressure following a turbine and reactor trip. The steam dump system consists of two ADVs (one

per steam generator) which exhaust to the atmosphere. The bypass system consists of four turbine bypass valves which exhaust to the main condenser. The ADVs and turbine bypass valves reduce, but do not eliminate, the probability of the main steam safety valves (MSSVs) opening following turbine and reactor trips from full power. The steam dump system is safety-related.

Two normally shut ADVs are connected to the main steam headers between the containment penetrations and the MSSVs. When opened, the ADVs exhaust part of the secondary steam flow to the atmosphere through separate vent enclosures which extend from the 45-foot level up through the roof of the Auxiliary Building.

There is one ADV per main steam line and one main steam line per steam generator. The ADVs are Copes-Vulcan, air-operated (air to open), 5-inch globe valves that are made of carbon steel. They have a steam flow capacity of 281,750 lbm/hr. Combined, the two valves are capable of passing 5% of the total secondary steam flow. This rating enables them to remove reactor decay heat during plant cooldown or heatup. The ADVs are designed for a maximum steam pressure of 1000 psig and a maximum temperature of 580°F. The valves are designed to fail in the shut position using an Inconel-X spring. Each valve is equipped with a manual override (hand wheel) to allow it to be locally manually operated as required. The ADVs can be isolated using a manually operated isolation valve that is installed upstream of each ADV inlet.

The ADV controls provide automatic or operator control of the ADVs during normal and emergency plant operation. During normal plant operation, the ADVs remain shut until the main turbine trips. There are three modes of operation for the ADVs. They can be automatically operated as part of the Reactor Regulating system. They can also be manually controlled (via Hand Indicating Controllers) from the Control Room or the alternate shutdown panel. They can also be manually controlled locally (via a hand wheel) at the ADV enclosures in the Auxiliary Building. The system controls are arranged for either automatic operation or remote manual control. Normal operation is through the Reactor Regulating system as described below.

Usually, the ADVs are positioned by the Reactor Regulating system, using the reactor coolant average temperature error signal when the turbine is tripped. In the event of a turbine trip above a preset power level, a quick-opening signal is provided to fully open both the ADVs and the turbine bypass valves. When T_{avg} is reduced to less than a predetermined temperature, the ADVs are modulated as a function of T_{avg}, and the turbine bypass valves are modulated as a function of the main steam header pressure. The total respective capacities of the ADVs and turbine bypass valves are 5% and 40% of full reactor power steam flow.

If manual operation is needed, the ADV can be manually controlled using Hand Indicating Controllers in the Control Room. If operation outside the Control Room is needed, the ADVs can also be manually controlled from the auxiliary shutdown panel. The ADV hand controllers each control one ADV and are equipped with a variable valve position control with a 0 to 100% output meter. Control of the ADVs is shifted from the Control Room to the auxiliary shutdown panel using four control transfer switches located in the 45-foot Switchgear Room. The quick-opening feature is disabled.

If local manual operation is required, the ADVs can be locally opened or closed using a hand wheel attached to the ADV. The hand wheel is external to the ADV enclosure in the Auxiliary Building. The area is accessible following a turbine and reactor trip or an accident. Intermediate positioning of the ADV can also be performed using the hand wheel.

The ADVs controls receive electrical power from emergency diesel generator-backed, engineered safety feature, 125 VDC unit control panels. When electrical power is unavailable, the quick-opening feature is disabled. The ADVs may still be automatically or manually controlled from the Control Room. Loss of control voltage also actuates an alarm in the Control Room. Local manual operation of the ADVs does not require electrical power or air to function as designed.

Non-accident Operation

The ADVs provide a means of heat removal following turbine and reactor trip from full power, during hot standby, and during a plant cooldown. The ADVs are capable of removing reactor decay heat when the condenser is not available. The removal of reactor decay heat via the ADVs is not a normal mode of operation. Main condenser vacuum is normally maintained to enable removal of reactor decay heat through the turbine bypass valves until the shutdown cooling system can be initiated. In the event of a loss-of-condenser vacuum, the turbine bypass valves close automatically and the ADVs cycle to exhaust the steam generated by decay heat.

Accident Operation

The feeding of the steam generators using auxiliary feedwater, combined with exhausting steam to the atmosphere through the ADVs may be used to provide long-term cooling following an accident. This is not the preferred method of cooling the plant to shutdown cooling conditions. The preferred method of cooling the plant to shutdown cooling conditions is to use the turbine bypass valves and exhaust the steam to the condenser. However, a number of accident scenarios assume a loss of offsite power and without offsite power, the condensers lose vacuum and the turbine bypass valves close. Therefore, both methods are typically described in the abnormal and emergency operating procedures.

The ADV has two functions to be considered. One function of the ADV is to cool the RCS to shutdown cooling (SDC) conditions following an accident by passing steam from the main steam system to the atmosphere at a rate equivalent to 5% full reactor power steam flow. This can be accomplished with local manual (hand wheel) operation. The other specified function of the ADV is to close when needed to minimize a radioactive release via its associated steam generator (SG) due to a leak from the RCS to the secondary system. In the bounding case from the accident analyses in the UFSAR, closure of an ADV is required within two hours following reactor trip for a SGTR. This can be accomplished with local manual (hand wheel) operation.

Accident Analyses

To address the scope of the proposed TS, the UFSAR accident analyses descriptions were reviewed to determine the extent to which the ADVs are credited in the accident analyses. The review determined that the ADVs are not credited in any of the core response portions of the analyses, because assuming that the ADVs operate would result in a less severe core response. However, ADV use is described in several accident analyses as it relates to control of radiological dose. The results of the review are in Table 1 below.

Table 1 - Summary of UFSAR Chapter 14 Event Dispositions

UFSAR Event	Event Description	Disposition
14.2	Control Element Assembly Withdrawal Event	ADVs not discussed
14.3	Boron Dilution Event	ADVs not discussed

UFSAR Event	Event Description	Disposition
14.4	Excess Load Event	ADV and TBV are event initiators. Condenser remains available for cooldown. No fuel failure is postulated. Dose analyses are bounded by SGTR.
14.5	Loss of Load Event	ADVs not discussed
14.6	Loss of Feedwater Flow Event	Condenser remains available for cooldown. No fuel failure is postulated. Dose analyses are bounded by Loss of Non-Emergency AC Power.
14.7	Excess Feedwater Heat Removal Event	ADVs are not actuated.
14.8	Reactor Coolant System Depressurization Event	ADVs are assumed to open and result in a negligible site boundary dose.
14.9	Loss of Coolant Flow Event	ADVs are assumed to open and result in a negligible site boundary dose.
14.10	Loss of Non-Emergency AC Power Event	The MSSVs are used to initially remove decay heat. ADVs are used later in the event to cool down the Unit. The resulting offsite dose is negligible.
14.11	Control Element Assembly Drop Event	ADVs not discussed
14.12	Asymmetric Steam Generator Event	ADVs not discussed
14.13	Control Element Assembly Ejection	ADVs are mentioned as the source of environmental releases.
14.14	Steam Line Break Event	ADVs are mentioned in a non-limiting scenario.
14.15	Steam Generator Tube Rupture Event	This is the limiting event for operation of the ADVs, both for cooldown and radiological release control.
14.16	Seized Rotor Event	ADVs are mentioned as the source of environmental releases.
14.17	Loss-of-Coolant Accident	ADVs not discussed
14.18	Fuel Handling Incident	ADVs not discussed
14.19	Turbine Generator Overspeed Incident	ADVs not discussed
14.20	Containment Response	ADVs not discussed
14.22	Waste Gas Incident	ADVS not discussed
14.23	Waste Processing System Incident	ADVs not discussed
14.24	Maximum Hypothetical Accident	ADVs not discussed
14.25	Excessive Charging Event	ADVs not discussed
14.26	Feedline Break Event	ADVs not discussed

Section 14.4, Excess Load Event – The most severe loss of load event is initiated from a hot full power condition when the ADVs and the turbine bypass valves spuriously open. Offsite power remains available and the condenser path can be recovered after 10 minutes. The analysis also assumes that the operator closes the ADVs 10 minutes from the initial opening; however this time is after the return to power. The Excess Load Event is an anticipated operational occurrence for which the Reactor Protective System trip and/or sufficient thermal margin prevent acceptable fuel limits from being exceeded. No fuel failure is assumed to occur, so any offsite dose due to this event is minimized and bounded by the Loss of Non-Emergency AC Power Event.

Section 14.6, Loss of Feedwater Flow Event – For the secondary pressure analysis, neither the ADVs nor the turbine bypass valves are assumed to operate, since they would relieve pressure and not result in the most severe case. Only the MSSVs are assumed to be available to relieve secondary side pressure. For the analyses that maximize steam generator inventory depletion, the ADVs and turbine bypass valves are assumed to operate, because that results in a more rapid inventory depletion and a more severe condition.

Section 14.10, Loss of Non-Emergency AC Power Event – A loss of non-emergency AC power is assumed to initially render the ADVs and the turbine bypass valves inoperable. The event evaluates the ability of the MSSVs to remove decay heat. The analysis assumes that at 15 minutes into the event, the operator can manually operate the ADVs to initiate plant cooldown. However, the analysis has shown that the RCS average temperature approaches the saturation temperature for the MSSV setpoint. The RCS temperature can be maintained at that point until cooldown can be initiated. The offsite doses resulting from cooling the plant down using the ADVs was determined to be negligible.

Section 14.13, Control Element Assembly Ejection Event – The ADVs are assumed to be used in their normal manner during this event. They are considered as a release point for the offsite dose calculations.

Section 14.15, Steam Generator Tube Rupture Event – The SGTR analysis is the limiting case for radiological releases due to ADV operation. The ADV on the affected SG is assumed to open upon turbine and reactor trip and a loss of offsite power. The condenser is not available and the turbine bypass valves remain closed. The MSSVs also mitigate the initial pressure increase and help to cool the RCS within the limits of their setpoints. Within one hour after initially taking control, the ADV on the unaffected SG is opened (if not previously opened) to begin an RCS cooldown and minimize any additional MSSV operation. The one hour time allows for local manual operation of the ADV using the hand wheel at the ADV enclosure in the Auxiliary Building, if automatic or remote manual operation does not work. If the ADV line is isolated with the installed isolation valve, the isolation valve is also manually opened. The isolation valve is located in the main steam isolation valve room, just below the ADV enclosure. At two hours after turbine and reactor trip, the ADV on the affected SG is closed and the radiological releases associated with it are terminated.

There are two separate analysis aspects for the SGTR, one evaluates core response to the event, and one evaluates the offsite dose consequences of the event. They assume different operation of the ADVs as part of the analysis.

The core response aspect is a depressurization event. The action of the thermal margin/low pressure trip prevents the departure from nucleate boiling specified acceptable fuel design limits from being exceeded. Since the ADVs do not open until the T_{cold} drops due to reactor trip, they have no impact on the departure from nucleate boiling calculation. Therefore, the operation of the ADVs is not considered or credited in the core response analysis.

In performing the radiological consequences analysis for the SGTR, assumptions involving the RCS and secondary side parameters were established to maximize radiological releases within emergency operating procedure constraints. The RCS analysis was manipulated to establish the highest possible RCS pressure to drive more radioactive material through the ruptured tube into the secondary system. Additionally, the secondary system pressure was minimized by assuming the opening of as many relief valves on the affected SG as possible (assuming a loss of offsite power) to maximize the radioactive material released to the environment. This creates a worst-case environment for dose with a successful core response. The UFSAR describes automatic opening of the ADV on the affected SG to maximize the radioactive release. Various operations of the ADVs are assumed in the analysis, but they are established

to maximize offsite dose. Manual operation of the ADV would meet the core response needs and would not increase the offsite dose from the SGTR beyond that assumed in the analysis. Therefore, automatic operation of the ADV is not necessary for performing its specified heat removal function.

Later in the SGTR event, the ADV on the affected SG is assumed to be manually controlled to reduce radioactive material release. This is one of the specified functions of the ADV. The SGTR analysis assumes that the affected SG is isolated within two hours of reactor trip. The unaffected SG ADV can be opened at any time to begin cooling down the Unit.

Section 14.16, Seized Rotor Event – The ADVs are assumed to be used in their normal manner during this event. They are considered as a release point for the offsite dose calculations.

Operator Action

Although automatic operation is the preferred method of operating the ADV, the emergency operating procedures contain steps to send an operator to the ADV enclosure in the Auxiliary Building to manually operate the ADV if needed. An operator in communication with the Control Room operates the valve manually, as directed by the Control Room, using the hand wheel. These steps are being included in our time critical operator action program to ensure that they can continue to be done in the timeframe assumed in the accident analysis.

When an ADV is opened during accident conditions, operators are directed to record the time the ADV is opened, so an estimate of the radioactivity released can be made. The radioactivity released can be estimated using the steam generator activity obtained from a sample, the duration the ADV was opened, the estimated flow rate through the ADV, and the measured meteorological conditions. Radiation monitors are also installed in the steam generator blowdown system, main steam line, and condenser air removal system to help estimate the radioactivity released.

Testing History

To provide assurance of ADV operability, we propose to adopt a SR similar to Improved TS SR 3.7.4.1. The SR would require that we verify one complete cycle of each ADV every 24 months (refueling interval). Since the isolation valve does not provide a specified function or support function, no SR is proposed for it.

Currently, this activity is performed during each refueling outage as part of our operations procedures to ensure that the ADVs will cycle. The ADVs are very reliable valves. Ten years of Condition Reports were reviewed for any issues related to ADV operation. There was one instance of an issue that would have affected the local manual operation of the ADV and the ADV could not have performed its specified function. During testing in 2009, a 90° coupling was discovered to be broken on the manual hand wheel of an ADV. This coupling connected the horizontal shaft and the vertical shaft between the hand wheel and the valve. The coupling was replaced and the valve was returned to service. Automatic operation of the ADV would not have been affected by the broken coupling.

Safety Margins

The proposed addition of the ADV TS does not change compliance with any codes or standards that have been previously committed to or used. The safety analysis acceptance criteria continue to be met and the addition of the TS for the ADVs ensures that the inputs and assumptions of the SGTR are not adversely affected.

Operability Criterion

As discussed above, the ADVs are manually operated to perform their specified function following a SGTR. No automatic operation is required to mitigate the consequences of an accident. Therefore, the ADVs are Operable when they can be manually operated within the time assumed in the SGTR analysis.

Therefore, any condition that would prevent the passage of the required steam flow would render the affected ADV inoperable. However, conditions that do not affect the required passage of steam flow (i.e., steam leakage, loss of automatic control, etc.) do not affect the operability of the ADV. Likewise, closure of the isolation valve for the ADV line does not render the ADV inoperable because the isolation valve can be opened and the ADV manually operated within the timeframe assumed in the accident analyses.

PRA Evaluation

We are not requesting a risk informed change to the licensing basis, therefore, no risk assessment of this proposed change was performed.

Defense-in-Depth

The proposed addition of the ADVs to the TS was evaluated and determined to be consistent with the defense-in-depth philosophy. The defense-in-depth philosophy in reactor design and operation results in multiple means to accomplish specified functions and prevent the release of radioactive material.

A reasonable balance among preventing core damage, preventing containment failure, and consequence mitigation is preserved

The addition of a TS governing availability and operation of the ADVs does not change the balance between the principals of prevention and mitigation. The operation of the ADVs is not being changed as a result of their addition to the TS. Thus, the current balance between prevention and mitigation is preserved. Furthermore, no new accident or transient is introduced with the proposed change and the likelihood of a transient or accident is not increased. In fact, the additional controls of the proposed TS for the ADVs will provide greater visibility and attention for these valves and may result in a reduced likelihood of a valve failure resulting in an accident.

Requires no new programmatic activities

The plant design is not changed to accommodate the new proposed TS. The ADVs will function in the same manner as before, with no additional reliance on additional systems, procedures, or operator actions. Testing of the ADVs is already conducted in a manner consistent with the proposed SR.

System redundancy, independence, and diversity are maintained commensurate with the expected frequency and consequences of challenges to the system

There is no change to the redundancy, independence, or diversity of heat removal systems caused by the introduction of this new TS. The ADVs are redundant to each other and heat removal through the ADVs is redundant and independent of other heat removal means, such as the turbine bypass valves.

Defenses against common cause failures are maintained and the potential for introduction of a new common cause failure mechanism has been addressed

The introduction of a new TS does not impact the defenses against common cause failures that currently exist. The requested Surveillance Frequency is the same as the current testing interval, so no new common cause failure mechanisms are expected to arise between surveillance tests. In addition, the operating environment for these components remains the same; therefore, no new common cause failure

modes are expected. Also, operator actions are not impacted by the addition of this new TS, therefore no additional human performance common cause failures need to be considered.

Independence of physical barriers is maintained

The physical barriers protecting the public are maintained. The addition of the proposed TS does not impact the fission product barrier, the RCS barrier, or the containment barrier. The proposed TS provides additional controls for a system that is used to help mitigate the consequence of an accident.

Defenses against human errors are maintained

No new operator actions related to the addition of a new ADV TS are required. The operation of the ADVs is described in appropriate emergency operating procedures. No additional operating or maintenance procedures have been introduced. The existing Operations procedure that tests the ADVs will become part of the formal surveillance test procedures as a result of the addition of the new SR. No new at-power testing or maintenance activities are expected to occur as a result of the introduction of the proposed TS.

4.0 REGULATORY SAFETY ANALYSIS

4.1 Applicable Regulatory Requirements/Criteria

General Design Criterion 34 addresses the requirements of a residual heat removal system. The ADVs remove heat from the main steam system and perform an initial heat removal function. Additionally, General Design Criterion 60 addresses the control of releases of radioactive material to the environment. The ADVs are assumed to be the primary release path for radioactive material following a steam generator tube rupture.

General Design Criterion 34, "Residual Heat Removal," states that a system to remove residual heat shall be provided. The system safety function shall be to transfer fission product decay heat and other residual heat from the reactor core at a rate such that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded.

Suitable redundancy in components and features, and suitable interconnections, leak detection, and isolation capabilities shall be provided to assure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) the system safety function can be accomplished, assuming a single failure.

General Design Criterion 60, "Control of Releases of Radioactive Materials to the Environment," states that the nuclear power unit design shall include means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Sufficient holdup capacity shall be provided for retention of gaseous and liquid effluents containing radioactive materials, particularly where unfavorable site environmental conditions can be expected to impose unusual operational limitations upon the release of such effluents to the environment.

Although the Calvert Cliffs licensing basis is the draft General Design Criteria, these General Design Criteria continue to be met following the addition of the ADVs to the TS. The addition of the ADVs to the TS provides additional controls for availability and testing of the ADVs. Since the ADVs are assumed to be manually operated via a hand wheel during an accident, there is no requirement for electric power. Additionally, the ADVs can perform their function of cooling the RCS to SDC conditions

following the SGTR accident following a single failure. This continues to ensure that the heat removal function described by General Design Criterion 34 is maintained.

General Design Criterion 60 requires that radioactive material releases are controlled during anticipated operational occurrences. During a SGTR, the radioactive releases are controlled within the bounds of the accident dose analysis by closing the ADV of the affected SG within two hours of reactor trip. The appropriate emergency operating procedure contains appropriate operator actions to isolate the affected SG to meet the accident analysis assumptions. Therefore, General Design Criterion 60 continues to be met.

4.2 No Significant Hazards Consideration

Calvert Cliffs Nuclear Power Plant is proposing an amendment to Renewed Operating Licenses DPR-53 and DPR-69 for Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Units 1 and 2 to add a Technical Specification (TS) for the Atmospheric Dump Valves (ADVs). Following review of the basis for atmospheric dump valve use in the accident analyses and in the emergency operating procedures, we have determined that the atmospheric dump valves meet the requirements of 10 CFR 50.36(c)(2)(ii) for inclusion in the Technical Specifications.

Calvert Cliffs has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, as discussed below:

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

   Response: No.

   The proposed addition of a new TS to address the operability of the ADVs does not alter the assumed initiators to any analyzed event. The probability of an accident previously evaluated will not be increased by this proposed change. This proposed change will not affect radiological dose consequence analyses. The radiological dose consequence analyses assume a certain release of radioactive material through the ADVs following a steam generator tube rupture (SGTR), which is not affected by the addition of the ADVs to the TS. The addition of a Surveillance Requirement for the ADVs will continue to ensure that the ADVs can perform their specified function. The consequences of an accident previously evaluated will not be increased by this proposed change.

   Therefore, operation of the facility in accordance with the proposed TS for the ADVs will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No.

   The proposed addition of a new TS to address the operability of the ADVs has been evaluated to determine the effect of adding the new TS to the operation of the plant. This change does not involve any alteration in the plant configuration (no new or different type of equipment will be installed) or make changes in the methods governing normal plant operation. The change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, operation of the facility in accordance with the proposed addition of a new TS to address the operability of the ADVs would not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No.

The margin of safety is related to the ability of the ADV to release enough steam to cool the Reactor Coolant System down and be isolated when required to limit the radioactive release from a SGTR. The inclusion of the ADVs in the TS will provide limited time for continued operation without both ADVs available. This ensures that the margin of safety is maintained by ensuring that the ADV can meet the assumptions for its operation specified in the SGTR analysis. Since the radiological consequences of a SGTR are not affected by the addition of the proposed TS, the margin of safety is not changed significantly.

Therefore, the proposed addition of a new TS to address the operability of the ADVs does not involve a significant reduction in the margin of safety.

4.4 Conclusions

Calvert Cliffs has determined that based on the considerations above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will continue to be conducted in accordance with the site licensing basis, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment would change a requirement with respect to installed facility components located within the restricted area of the plant as defined in 10 CFR Part 20. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. NUREG 1432, Revision 4, Standard Technical Specifications Combustion Engineering Plants, March 2012
2. NRC Administrative Letter 98-10, Dispositioning of Technical Specifications That are Insufficient to Assure Plant Safety, December 29, 1998

ATTACHMENT (2)

PROPOSED NEW TECHNICAL SPECIFICATION

Calvert Cliffs Nuclear Power Plant, LLC
January 13, 2014

3.7 PLANT SYSTEMS

3.7.18 Atmospheric Dump Valves (ADVs)

LCO 3.7.18 Two ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is being relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1 Restore ADV line to OPERABLE status.	48 hours
B. Two ADV lines inoperable.	B.1 Restore one ADV line to OPERABLE status.	1 hour
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours 24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify one complete cycle of each ADV.	24 months

ATTACHMENT (3)

PROPOSED NEW TECHNCIAL SPECIFICATION BASES

Calvert Cliffs Nuclear Power Plant, LLC
January 13, 2014

Technical Specification Bases 3.7.18

B3.7.18 Atmospheric Dump Valves (ADVs)

Background

The ADVs provide a safety grade method for cooling the unit to Shutdown Cooling (SDC) System entry conditions, should the preferred heat sink via the Turbine Bypass Valves to the condenser not be available, as discussed in the UFSAR, Section 10.3 (Reference 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST). The ADVs may also be used during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the Turbine Bypass Valves.

Two ADV lines are provided, one per steam generator. Each ADV line consists of one ADV and an associated isolation valve. The ADVs are provided with upstream isolation valves to permit their being tested at power, if desired. The ADVs are equipped with manual hand wheels to open and close them. Pneumatic controllers are used to operate the ADVs as the preferred method, but are not relied upon during an accident. A description of the ADVs is found in Reference 1. The ADVs are considered OPERABLE when the manual control is available for local manual operation.

Applicable Safety Analyses

The design basis of the ADVs is established by the capability to cool the unit to SDC System entry conditions. The cooldown rate assumed in the accident analyses is obtainable by one or both steam generators. The design is adequate to cool the unit to SDC System entry conditions with only one ADV and one steam generator.

In the steam generator tube rupture accident analysis presented in the UFSAR, the ADVs are assumed to be used by the operator to cool down the unit to SDC System entry conditions because the accident is accompanied by a loss of offsite power. Prior to the operator action, the MSSVs are used to maintain steam generator pressure and temperature at the MSSV setpoint. The ADVs may be used for other accidents that are accompanied by a loss of offsite power. The limiting events are those that render one steam generator unavailable for RCS heat removal, with a coincident loss of offsite power. Typical initiating events falling into this category are a feedwater line break, and a SGTR event (limiting case).

The ADVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two ADV lines are required to be OPERABLE to ensure that at least one ADV is OPERABLE to conduct a unit cooldown following an event in which one steam generator becomes unavailable. A closed isolation valve does not render its ADV line inoperable since operator action time to open the isolation valve is supported in the accident analysis.

Failure to meet the LCO can result in the inability to cool the unit to SDC System entry conditions following an event in which the condenser is unavailable for use with the Turbine Bypass Valves. An ADV is considered OPERABLE when it is capable of providing relief of the main steam flow, and is capable of fully opening and closing when required.

Applicability

In MODES 1, 2, and 3, and in MODE 4, when steam generators are being relied upon for heat removal, the ADVs are required to be OPERABLE. In MODES 5 and 6, an SGTR is not a credible event.

Actions

A.1

With one required ADV line inoperable, action must be taken to restore the OPERABLE status within 48 hours. The 48 hour Completion Time takes into account the redundant capability afforded by the remaining OPERABLE ADV line, and a backup in the Turbine Bypass Valves and MSSVs.

B.1

With two required ADV lines inoperable, action must be taken to restore one of the ADV lines to OPERABLE status. As the isolation valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 1 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the Turbine Bypass Valves and MSSVs, and the low probability of an event occurring during this period that requires the ADV lines.

C.1 and C.2

If the ADV lines cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance upon the steam generator for heat removal, within 24 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

Surveillance Requirements

SR 3.7.18.1

To perform a cooldown of the RCS, the ADVs must be able to be opened through their full range. This SR ensures the ADVs are tested through a full cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the SR when performed at the 24 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

References

1. UFSAR, Section 10.3