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Constellation Energy

• Nine Mile Point Nuclear Station

February 25, 2008

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 1, Docket No. 50-220

Request for License Amendment to Revise Surveillance Requirements Located in
Technical Specifications Section 3/4.4.4, "Emergency Ventilation System" and
Technical Specifications Section 3/4.4.5, "Control Room Air Treatment System"

- REFERENCES:**
1. NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Volume 1, Revision 3, published June 2004.
 2. NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.
 3. Nine Mile Point Unit 1 Technical Specifications Amendment No. 171, TAC No. MB1339, dated July 30, 2001.

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an amendment to the Nine Mile Point Unit No. 1 (NMP1) Renewed Facility Operating License DPR-63. The proposed amendment would revise Technical Specifications (TS) Section 3/4.4.4, "Emergency Ventilation System" to remove the operability and surveillance requirements for the 10,000 watt (10kW) heater located in the common supply inlet air duct for the Reactor Building Emergency Ventilation System (RBEVS). Consistent with Standard Technical Specifications for ventilation filter testing programs (Reference 1) and with the previous NMP1 adoption of American Society for Testing and Materials D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon" (References 2 and 3), for laboratory testing of activated charcoal located in the RBEVS charcoal adsorber banks, the 10 kW heater humidity control function for maintaining charcoal efficiency is no longer required. Additionally, the 10 hour duration monthly system operational surveillance test requirement would be reduced to a 15 minute run surveillance test requirement.

The proposed amendment would also revise TS 3/4.4.5, "Control Room Air Treatment System" to reduce the 10 hour duration monthly system operational surveillance test requirement to a 15 minute run surveillance test requirement.

NMPNS has concluded that the activities associated with the proposed change represent no significant hazards consideration under the standards set for in 10 CFR 50.92.

The Enclosure provides an evaluation of the proposed change and TS pages marked up to show the proposed change. Also included are marked up TS Bases pages. The proposed TS Bases changes are provided for information only and will be processed in accordance with NMP1 TS 6.5.6, "Technical Specifications (TS) Bases Control Program."

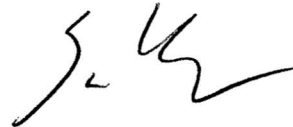
The enclosed submittal contains no regulatory commitments.

Approval of the proposed amendment is requested by February 2009. Once approved, the amendment shall be implemented within 60 days of receipt of the approved amendment.

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request, with Enclosure, to the appropriate state representative.

Should you have any questions regarding the information in this submittal, please contact T. F. Syrell, Licensing Director, at (315) 349-5219.

Very truly yours,

A handwritten signature in black ink, appearing to be 'T. F. Syrell', written in a cursive style.

STATE OF NEW YORK :
:
COUNTY OF OSWEGO : TO WIT:

I, Sam L. Belcher, being duly sworn, state that I am Plant General Manager-Nine Mile Point, and that I am duly authorized to execute and file this License Amendment request on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 25th day of Feb., 2008.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

10/25/09
Date

SANDRA A. OSWALD
Notary Public, State of New York
No. 010S6032276
Qualified in Oswego County
Commission Expires 10/25/09

SLB/GB

Enclosure: Evaluation of the Proposed Change

cc: S. J. Collins, NRC Regional Administrator, Region I
E. C. Knutson, Senior NRC Resident Inspector
J. P. Spath, NYSERDA
M. J. David, NRC Project Manager

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1.0 SUMMARY DESCRIPTION

This evaluation supports a request to amend Renewed Operating License DPR-63 for the Nine Mile Point Nuclear Station Unit No. 1 (NMP1).

The proposed change would revise NMP1 Technical Specifications (TS) Section 3/4.4.4, "Emergency Ventilation System" to remove the operability and the surveillance requirements associated with the 10,000 watt (10 kW) heater located in the common supply air inlet duct servicing both charcoal filter trains of the Reactor Building Emergency Ventilation System (RBEVS). Consistent with NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Revision 3 (Reference 1), and the previous NMP1 adoption of American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon" (References 2 and 3) for testing methodology of activated charcoal located in the RBEVS charcoal adsorber banks, the inlet 10 kW heater humidity control function for maintaining charcoal efficiency is no longer required. Additionally, the 10 hour duration monthly system operational surveillance test requirement would be reduced to a 15 minute duration monthly system operational surveillance test requirement. The requirement for the 10 hour duration monthly system operational test was established to energize the 10 kW heater and provide the heater with a sufficient time interval to remove moisture from the charcoal adsorber banks while also continuing to provide reliability of the fan motors, controls and the redundancy available in the system. The revised 15 minute duration monthly system operational surveillance test requirement continues to demonstrate reliability of the fan motors and controls.

The proposed change would also revise TS Section 3/4.4.5, "Control Room Air Treatment System" surveillance requirement TS 4.4.5e by reducing the 10 hour duration monthly system operational surveillance test requirement to a 15 minute duration monthly system operational surveillance test requirement.

Approval of the proposed change is requested by February 2009. Once approved, the amendment shall be implemented within 60 days of receipt of the approved amendment.

Attachment 1 to this Enclosure contains TS pages marked up to show the proposed change. Attachment 2 provides marked up TS Bases pages that are being submitted for information only.

2.0 DETAILED DESCRIPTION

2.1 Reactor Building Emergency Ventilation System

The RBEVS is comprised of an inlet air duct taking suction from the normal reactor building ventilation discharge, an electric 10 kW heater located in the common inlet air supply duct to reduce inlet air relative humidity (RH), a dual bank of filters each comprised of two high-efficiency particulate absolute (HEPA) filters, a charcoal adsorber bank, a 1,000 watt (1 kW) heater to prevent condensation in the charcoal filter bank when the system is first placed in service, and a motor driven blower. The design function of the 10 Kw heater is to maintain RH levels such that charcoal efficiency is maintained during system operation.

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NMP1 TS 3/4.4.4 requires the RBEVS 10 kW heater to be operable when secondary containment integrity is required. The heater, located in the common air supply header, services air to both RBEVS filter trains, and if inoperable, affects the operability of both filter trains. If the heater is inoperable, per TS 3.4.4f, within 36 hours, the reactor shall be placed in a condition for which the RBEVS is not required.

NMP1 TS 3/4.4.4 was amended on July 31, 2001 (Amendment No. 171, Reference 3) to revise the standard by which NMP1 tested RBEVS charcoal adsorber materials to ASTM D3803-1989. This amendment was consistent with actions requested in NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal" (Reference 4).

Both the more stringent charcoal testing methodologies required by ASTM-D3803-1989 and the more conservative charcoal test parameters adopted by NMP1 as a result of Amendment No. 171 (carbon sample analyses shall show $\geq 95\%$ radioactive methyl iodine removal when tested at 30°C and $95\% \text{ RH}$), support the elimination of the requirement for the humidity control design function of the 10 kW heater. The heater is no longer required to maintain charcoal efficiency, but will continue to provide added margin by reducing humidity.

The proposed amendment will remove from TS 3/4.4.4, "Emergency Ventilation System," surveillance requirements associated with the 10 kW heater such that the operability status of the RBEVS will no longer be impacted by the 10 kW heater.

Additionally, with the NMP1 adoption of ASTM D3803-1989, and consistent with GL 99-02, (laboratory carbon sample testing using the $95\% \text{ RH}$ test factor), the 10 hour duration monthly system operational surveillance test requirement, (TS 3/4.4.4e), will be reduced to a 15 minute duration monthly system operational surveillance test requirement. The requirement for the 10 hour duration monthly system operational test was established to energize the 10 kW heater and provide the heater with a sufficient time interval to remove moisture from the charcoal adsorber banks while continuing to demonstrate reliability of the fan motors and controls. The revised 15 minute duration monthly system operational surveillance test requirement continues to demonstrate reliability of the fan motors and controls.

2.2 Control Room Air Treatment System

The function of the Control Room Air Treatment (CRAT) System is to maintain habitability within the control room during normal and accident conditions. The CRAT System provides heating and cooling to the control complex for personnel comfort and control instrument protection. It provides clean uncontaminated air to the control complex, monitors radiation levels at the fresh air intake to automatically filter any contaminated outside air entering the system, and maintains positive pressure in the control complex relative to the surrounding area and the outside environment. The CRAT System starts automatically upon receipt of a loss-of-coolant accident signal. The system can also be manually initiated. The system is comprised of two redundant ventilation trains, each comprised of a full capacity fan. Air then passes through a high HEPA filter and an activated charcoal adsorber bank. The charcoal adsorber bank is installed to reduce the potential intake of radioiodine to the control room.

Surveillance requirement TS 4.4.5e states that "The system shall be operated at least 10 hours every month." The current TS Bases state that the operation of the CRAT System for a 10 hour duration every month demonstrates operability of the filters and the charcoal adsorber system and removes excessive moisture built up on the charcoal adsorber banks.

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The previous NMP1 adoption (Reference 3) of ASTM D3803-1989, including the more conservative charcoal test parameters (carbon sample analyses shall show $\geq 95\%$ radioactive methyl iodine removal when tested at 30° C and 95% RH), was also applied to TS 3/4.4.5, "Control Room Air Treatment System" for laboratory carbon sample analyses. Consistent with GL 99-02, laboratory carbon sample testing using 95 % RH test factor, ensures that charcoal efficiency credited in the accident analysis remains valid and accounts for systems without humidity control. Therefore, removal of moisture from the charcoal adsorber system is no longer required. The revised 15 minute duration monthly system operational surveillance test requirement continues to demonstrate reliability of the fan motors and controls.

2.3 Summary of Technical Specifications Changes

The proposed TS changes are described below and are indicated on the marked up pages provided in Attachment 1. Associated proposed TS Bases changes are shown in Attachment 2. The TS Bases are provided for information only and will be processed in accordance with NMP1 TS 6.5.6, "Technical Specifications (TS) Bases Control Program."

Surveillance Requirement 4.4.4a(2)	Operability of inlet heater at rated power when tested in accordance with ANSI N.510-1980.	Deleted
Surveillance Requirement 4.4.4e	Each circuit shall be operated at least 15 minutes every month.	Revised
Surveillance Requirement 4.4.5e	The system shall be operated at least 15 minutes every month.	Revised

3.0 TECHNICAL EVALUATION

3.1 Reactor Building Emergency Ventilation System

The RBEVS is normally a standby system which performs only in the event of an accident or failure of the normal reactor building ventilation. The system is designed to remove air from areas where excessive heat concentration and potential airborne contamination exists, maintain negative pressure in the reactor building, and remove/filter particulates and iodines from the reactor building atmosphere prior to exhausting to the stack during secondary containment isolation conditions. Additionally, the RBEVS is credited with limiting the release of radioactive gases to the environment such that resulting doses will be less than the guideline values of 10 CFR Part 50.67, "Accident Source Term" acceptance criteria for analyzed accidents.

Each RBEVS charcoal adsorber bank contains activated and impregnated carbon that requires laboratory efficiency testing to validate that charcoal filter efficiency values, assumed in the design basis accident analyses, are valid when tested at the end of the operating cycle. The design function of the 10 kW heater was to provide, in the common supply duct, a heating source with sufficient capacity to reduce inlet air relative humidity from 100 % to 70 %.

In response to NRC GL 99-02, and as subsequently approved by the NRC in NMP1 TS Amendment No. 171, TS 3.4.4c was revised to state "The results of laboratory carbon sample analysis shall show $\geq 95\%$ radioactive methyl iodide removal when tested in accordance with

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ASTM D3803-1989 at 30° C and 95% R.H.” The use of the more stringent higher relative humidity test parameter (95 %), which contains a safety factor of ≥ 2 , assures that the charcoal efficiency assumed in the accident analysis is still valid at the end of an operating cycle, and allows removal of the need for the humidity control requirement because the lack of humidity control has been accounted for in the test conditions.

NUREG-1433, Revision 3, published in June 2004, contains the Improved Standard Technical Specification (STS) for General Electric BWR/4 plants. Revision 3 includes improvements gained from GL 99-02. Developmental guidance is provided in establishing updated ventilation filter testing program (VFTP, Section 5.5.8) requirements specific to the use of ASTM D3803-1989. Although the NMP1 TS are not STS formatted and do not contain a VFTP (although the equivalent requirements are incorporated directly into the TS), the program improvements are applicable the RBEVS specification.

ASTM D3803-1989 allows for, and accounts for testing of the charcoal without humidity control. Also, the Staff Note for NUREG-1433, Section 5.5.8 states “ASTM D3803-1989 is a more stringent testing standard because it does not differentiate between used and new charcoal, it has a longer equilibration period performed at a temperature of 30° C (86° F) and a relative humidity (RH) of 95% (or 70% with humidity control), and it has more stringent tolerances that improve repeatability of the test.” Additionally, “When ASTM D3803-1989 is used with 30° C (86° F) and 95% RH (or 70% RH with humidity control) is used, the staff will accept the following: Safety factor ≥ 2 for systems with or without humidity control.”

The 15 minute duration monthly system operational TS surveillance test requirement of the RBEVS is not specifically addressed in NUREG-1433 for Containment Systems (Section 3.6). However, it is implied that a 10 hour test duration is applicable to charcoal adsorber filter systems with heaters and whose TS adoption of Generic Letter 99-02 has taken the less conservative carbon sample analyses (70% RH with humidity control). The 15 minute duration surveillance requirement continues to demonstrate that the RBEVS, in a standby mode, starts on demand and demonstrates function of the system. NUREG-1433 includes specific justification for the CRAT System’s 15 minute duration monthly surveillance test run time as discussed below. The justification for the RBEVS 15 minute duration monthly surveillance run time is equivalent.

3.2 Control Room Air Treatment System

The monthly run surveillance requirement for the CRAT System was established to verify that, while in a standby mode, the system would start on demand and continue to operate. Such systems are required to be tested periodically to demonstrate the function of the system. The environmental conditions of the system are not severe and do not present a challenge to the system in its standby mode. Therefore, monthly surveillance testing provides an adequate functional check of the system and is based on known reliability of the system’s components.

The original 10 hour duration CRAT System monthly run surveillance was intended to demonstrate operability of the filter and the charcoal adsorber bed and remove excessive moisture built up on the adsorber. With the implementation of TS Amendment No. 171 and NMP1 adaption of the more stringent charcoal testing requirements from ASTM D3803-1989, specifically, charcoal sample testing to the temperature of 30° C (86° F) and a relative humidity of 95%, the requirement for a monthly 10 hour duration system run is not longer applicable. NUREG-1433, Revision 3, Section 3.7.4, “Main Control Room Envelop Control (MCREC) System” Surveillance Requirement Bases states that for “Systems without heaters need only be

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operated for ≥ 15 minutes to demonstrate the function of the system.” The revised 15 minute duration monthly system operational surveillance test requirement continues to demonstrate reliability of the fan motors and controls.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

As described in the NRC Safety Evaluation supporting NMP1 TS Amendment No. 171, the use of ASTM D3803-1989 provides accurate and reproducible test results. Additionally, the use of a safety factor of 2 in establishing acceptance limits for test penetration for radioactive methyl iodide ensure that the charcoal efficiency credited in the accident analysis is still valid at the end of a surveillance interval. The safety factor of two is consistent with GL 99-02, and the test parameters of 30° C (86° F) and 95% RH eliminate the need for the humidity control function in the RBEVS.

The adoption of the more conservative charcoal test parameters, (30° C [86° F] and 95% RH), from ASTM D3803-1989 for both TS 3/4.4, “Reactor Building Emergency Ventilation System” and TS 3/4.5 “Control Room Air Treatment System,” has removed the requirements associated with maintaining the humidity control function, thus removing the necessity for the requirements to maintain a 10 hour duration monthly system operational surveillance test. The reduction of the surveillance test duration to 15 minutes will not impact the ability of the charcoal adsorbers located in the RBEVS to meet their design requirements of limiting the release of radioactive gases to the environment in excess of 10 CFR 50.67, and will not impact the ability of the charcoal adsorber located in the CRAT System to minimize the amount of radioactive gases from entering the Control Room.

4.2 Significant Hazards Consideration

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting a revision to Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS) Section 3/4.4.4, “Emergency Ventilation System” and TS Section 3/4.4.5, “Control Room Air Treatment System.” The proposed change would remove from TS 3/4.4.4 the operability and surveillance requirements associated with the 10,000 watt (10 kW) heater located in the common supply air inlet duct servicing both charcoal filter trains of the Reactor Building Emergency Ventilation System (RBEVS), and reduce the duration of the monthly system operational surveillance test from 10 hours to 15 minutes in both TS Section 3/4.4.4 and TS Section 3/4.4.5.

The 10 kW heater is designed to lower the percent relative humidity of the air entering both charcoal filter trains of the RBEVS. As a result of the issuance of NRC Generic Letter (GL) 99-02, “Laboratory Testing of Nuclear-Grade Activated Charcoal” and subsequent changes in RBEVS charcoal testing methodology (TS Amendment 171), the inlet 10 kW heater humidity control function is no longer required in order for the RBEVS to perform its design function.

The 10 hour duration monthly system operational surveillance test requirement for both the RBEVS and the Control Room Air Treatment (CRAT) System was provided to demonstrate operability of the charcoal adsorber subsystems and allow a sufficient time interval to remove excessive moisture from the charcoal filter banks. As a result of the issuance of GL 99-02, “Laboratory Testing of Nuclear-Grade Activated Charcoal” and subsequent changes in RBEVS

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charcoal testing methodology (TS Amendment 171), the humidity control function is no longer technically required in order for either the RBEVS or the CRAT system to perform their design function.

NMPNS 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, "Issuance of Amendment," as discussed below:

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

Response: No.

The RBEVS and the CRAT System do not involve any initiators or precursors to an accident previously evaluated as the systems perform a mitigative function in response to an accident. Failure of the systems would result in the inability to perform their mitigative function but would not increase the probability of an accident previously evaluated. The RBEVS is designed to limit the release of radioactive gases to the environment such that resulting doses will be less than the guideline values of 10 CFR 50.67, "Accident Source Term." The CRAT System is designed to minimize the amount of radioactivity or other gases from entering the control room in the event of an accident. Both the RBEVS and the CRAT System charcoal filter materials are tested in accordance with American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon" at a test temperature of 30° C (86°F) while maintaining a relative humidity (RH) value of 95 %. The testing method assures the ability of the charcoal filters to perform their intended function with or without the humidity control function provided by the 10 kW heater. The filter efficiency values required by the TS test criteria provide a safety factor of 2, consistent with the recommendations of GL 99-02.

The previous NMP1 adoption of the more stringent ASTM D3803-1989 charcoal testing parameters resulted in the elimination for humidity control of inlet air in both the RBEVS and the CRAT system. Therefore, the need for a 10 hour duration monthly system operational surveillance test is no longer necessary to demonstrate reliability and proper function of the systems.

Therefore, these proposed changes do not alter the results of the accident dose consequence analyses and do not involve a significant increase in probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed amendment of removing the RBEVS 10 kW common supply air inlet heater requirements and reducing the duration of the monthly system operational surveillance requirements from 10 hours to 15 minutes for both the RBEVS and the CRAT System will not involve placing the system in a new configuration or operating the system in a different manner that could result in a new or different kind of accident.

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Testing of the charcoal filter materials in accordance with ASTM D3803-1989 standard at a test temperature of 30° C (86°F) while maintaining a relative humidity 95 % will continue to assure the ability of the system's charcoal filters to perform its intended function under potential higher inlet air RH values.

The previous NMP1 adoption of the more stringent ASTM D3803-1989 charcoal testing parameters resulted in the elimination of the need for humidity control of inlet air in both the RBEVS and the CRAT system. Therefore, the need for a 10 hour duration monthly system operational surveillance test is no longer necessary to demonstrate reliability and proper function of the systems.

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

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

Response: No.

The proposed amendment will not adversely affect the performance characteristics of either the RBEVS or the CRAT System, and will not affect the ability of either system to perform its intended function.

Testing of the charcoal filter materials in accordance with ASTM D3803-1989 and the test parameters required by the TS assures the ability of the charcoal filters to perform their intended function with or without the humidity control. The filter efficiency values required by the TS test criteria provide a safety factor of 2, consistent with the recommendations of GL 99-02.

The previous NMP1 adoption of the more stringent ASTM D3803-1989 charcoal testing parameters resulted in the elimination of the need for humidity control of inlet air in both the RBEVS and the CRAT system. Therefore, the need for a 10 hour duration monthly system operational surveillance test is no longer necessary to demonstrate reliability and proper function of the systems.

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

Based on the above, NMPNS concludes that the proposed amendment does not involve a significant hazards considerations under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

4.3 Conclusions

In conclusion, based on the considerations discussed 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 be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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5.0 ENVIRONMENTAL EVALUATION

A review has determined that the proposed amendment would change a requirement with respect to use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or accumulative occupational 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-1433, "Standard Technical Specifications General Electric Plants, BWR/4," Volume 1, Revision 3, published June 2004.
2. American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon."
3. Nine Mile Point Unit 1 Technical Specifications Amendment No. 171, "Ventilation Charcoal Adsorber Testing Program (TAC No. MB1339), dated July 30, 2001.
4. NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999.

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ATTACHMENT 1

Technical Specification Page Markups

TS Page 173

TS Page 174

TS Page 179

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
<p>3.4.4 <u>EMERGENCY VENTILATION SYSTEM</u></p> <p><u>Applicability:</u></p> <p>Applies to the operating status of the emergency ventilation system.</p> <p><u>Objective:</u></p> <p>To assure the capability of the emergency ventilation system to minimize the release of radioactivity to the environment in the event of an incident within the primary containment or reactor building.</p> <p><u>Specification:</u></p> <ul style="list-style-type: none"> a. Except as specified in Specification 3.4.4e below, both circuits of the emergency ventilation system shall be operable at all times when secondary containment integrity is required. b. The results of the in-place cold DOP and halo-genated hydrocarbon tests at design flows on HEPA filters and charcoal adsorber banks shall show > 99% DOP removal and > 99% halogen-ated hydrocarbon removal when tested in accordance with ANSI N.510-1980. 	<p>4.4.4 <u>EMERGENCY VENTILATION SYSTEM</u></p> <p><u>Applicability:</u></p> <p>Applies to the testing of the emergency ventilation system.</p> <p><u>Objective:</u></p> <p>To assure the operability of the emergency ventilation system.</p> <p><u>Specification:</u></p> <p>Emergency ventilation system surveillance shall be performed as indicated below:</p> <ul style="list-style-type: none"> a. At least once per operating cycle, not to exceed 24 months, the following conditions shall be demonstrated: <ul style="list-style-type: none"> (1) Pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches of water at the system rated flow rate ($\pm 10\%$). (2) Operability of inlet heater at rated power when tested in accordance with ANSI N.510-1980. DELETED

LIMITING CONDITION FOR OPERATION

- c. The results of laboratory carbon sample analysis shall show $\geq 95\%$ radioactive methyl iodide removal when tested in accordance with ASTM D3803-1989 at 30°C and 95% R.H.
- d. Fans shall be shown to operate within $\pm 10\%$ design flow.
- e. During reactor operation, including when the reactor coolant system temperature is above 215°F, from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such circuit is sooner made operable, provided that during such seven days all active components of the other emergency ventilation circuit shall be operable.

During handling of recently irradiated fuel in the reactor building, handling of an irradiated fuel cask in the reactor building, and operations with a potential for draining the reactor vessel (OPDRVs), from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, recently irradiated fuel handling in the reactor building, irradiated fuel cask handling in the reactor building, or OPDRVs are permissible during the succeeding seven days unless such circuit is sooner made operable, provided that

SURVEILLANCE REQUIREMENT

- b. The tests and sample analysis of Specification 3.4.4b, c and d shall be performed at least once per operating cycle or once every 24 months, or after 720 hours of system operation, whichever occurs first or following significant painting, fire or chemical release in any ventilation zone communicating with the system.
- c. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
- d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.
- e. Each circuit shall be operated ~~with the inlet heater on~~ at least ~~10 hours~~ every month.
15 MINUTES
- f. Test sealing of gaskets for housing doors downstream of the HEPA filters and charcoal adsorbers shall be performed at and in conformance with each test performed for compliance with Specification 4.4.4b and Specification 3.4.4b.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
<ul style="list-style-type: none"> c. The results of laboratory carbon sample analysis shall show $\geq 95\%$ radioactive methyl iodine removal when tested in accordance with ASTM D3803-1989 at 30°C and 95% R.H. d. Fans shall be shown to operate within $\pm 10\%$ design flow. e. From and after the date that the control room air treatment system is made or found to be inoperable for any reason, reactor operation, recently irradiated fuel handling, irradiated fuel cask handling, or OPDRVs are permissible only during the succeeding seven days unless the system is sooner made operable. f. If these conditions cannot be met, then the actions listed below shall be taken: <ul style="list-style-type: none"> 1. If in the power operating condition, or if the reactor coolant system temperature is greater than 212°F, reactor shutdown shall be initiated and the reactor shall be in cold shutdown within 36 hours. 2. Suspend any of the following activities within 2 hours: <ul style="list-style-type: none"> a. Handling of recently irradiated fuel in the reactor building, b. Irradiated fuel cask handling operations in the reactor building, c. Operations with a potential for draining the reactor vessel (OPDRVs). 	<ul style="list-style-type: none"> c. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing. d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal absorber bank or after any structural maintenance on the system housing. e. The system shall be operated at least 15 minutes 10 hours every month. f. At least once per operating cycle, not to exceed 24 months, automatic initiation of the control room air treatment system shall be demonstrated. g. At least once per operating cycle, not to exceed 24 months, the control room air treatment system shall be shown to maintain a positive pressure within the control room of greater than one sixteenth of an inch (water) relative to areas adjacent to the control room.

ENCLOSURE

ATTACHMENT 2

Bases Page Markups

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BASES FOR 3.4.4 AND 4.4.4 EMERGENCY VENTILATION SYSTEM

The emergency ventilation system is designed to filter and exhaust the reactor building atmosphere to the stack during secondary containment isolation conditions. Both emergency ventilation system fans are designed to automatically start upon high radiation in the reactor building ventilation duct or at the refueling platform and to maintain the reactor building pressure to the design negative pressure so as to minimize in-leakage. Should one system fail to start, the redundant system is designed to start automatically. Each of the two fans has 100 percent capacity.

High efficiency particulate absolute (HEPA) filters are installed before and after the charcoal adsorbers to minimize potential release of particulates to the environment and to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 95 percent, which is derived from applying a safety factor of 2 to the charcoal filter efficiency of 90 percent assumed in analysis of design basis accidents. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the 10CFR100 and General Design Criterion 19 guidelines for the accidents analyzed. Operation of the fans significantly different from the design flow will change the removal efficiency of the HEPA filters and charcoal adsorbers.

Only one of the two emergency ventilation systems is needed to cleanup the reactor building atmosphere upon containment isolation. If one system is found to be inoperable, there is no immediate threat to the containment system performance and reactor operation or refueling operation may continue while repairs are being made. If neither circuit is operable, the plant is brought to a condition where the emergency ventilation system is not required.

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. ~~Heater capability and~~ Pressure drop should be determined at least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. The charcoal adsorber efficiency test should allow for charcoal sampling to be conducted using an ASTM D3803-1989 approved method. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent meeting the physical property specifications of Table 5-1 of ANSI 509-1980.

BASES FOR 3.4.4 AND 4.4.4 EMERGENCY VENTILATION SYSTEM

The replacement charcoal for the adsorber tray removed for the test should meet the same adsorbent quality. Any HEPA filters found defective shall be replaced with filters qualified pursuant to ANSI 509-1980.

~~All elements of the heater should be demonstrated to be functional and operable during the test of heater capacity. Operation of the inlet heater will prevent moisture buildup in the filters and adsorber system.~~

With doors closed and fan in operation, DOP aerosol shall be sprayed externally along the full linear periphery of each respective door to check the gasket seal. Any detection of DOP in the fan exhaust shall be considered an unacceptable test result and the gaskets repairs and test repeated.

If significant painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign material, the same tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.

Demonstration of the automatic initiation capability and operability of filter cooling is necessary to assure system performance capability. If one emergency ventilation system is inoperable, the other system must be verified to be operable daily. This substantiates the availability of the operable system and thus reactor operation or refueling operation may continue during this period.

BASES FOR 3.4.5 AND 4.4.5 CONTROL ROOM AIR TREATMENT SYSTEM

15 minutes

Operation of the system for ~~10 hours~~ every month will demonstrate operability of the filters and adsorber system. ~~and remove excessive moisture built up on the adsorber.~~

If significant painting, fire or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemicals or foreign materials, the same tests and sample analysis shall be performed as required for operational use. The determination of significant shall be made by the operator on duty at the time of the incident. Knowledgeable staff members should be consulted prior to making this determination.