Constellation Energy
Nine Mile Point Nuclear Station

P.O. Box 63
Lycoming, NY 13093

August 08, 2005
NMP1L 1971

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

SUBJECT: Nine Mile Point Unit 1
Docket No. 50-220
Facility Operating License No. DPR-63

Emergency License Amendment Request Pursuant to 10 CFR 50.90:
Revision of Lake Water (Ultimate Heat Sink) Temperature Limit –
Technical Specification 3.3.7

Gentlemen:

Pursuant to 10 CFR 50.90, Nine Mile Point Nuclear Station, LLC, (NMPNS) hereby requests an emergency amendment to Nine Mile Point Unit 1 (NMP1) Operating License DPR-63. The proposed change to the Technical Specifications (TSs) contained herein would revise TS 3.3.7, "Containment Spray System," to revise the maximum lake water temperature limit from 81°F to 83°F. Lake Ontario serves as the ultimate heat sink (UHS) for the containment spray system and other NMP1 safety-related systems.

During the summer of 2005, a sustained period of unusually hot weather has caused Lake Ontario water temperatures to approach the current TS maximum temperature limit of 81°F. If the lake water temperatures were to exceed this limit, a plant shutdown would need to be initiated in accordance with TS 3.3.7, which would require NMP1 to be in hot shutdown within 8 hours and cold shutdown within 24 hours. Therefore, NMPNS requests approval of this license amendment request on an emergency basis. Upon approval, NMPNS will implement the amendment within five days. Information contained in Attachment 3 demonstrates that the criteria of 10 CFR 50.91(a)(5) are met for issuance of the amendment on an emergency basis. The NRC has previously approved similar TS changes for H. B. Robinson Steam Electric Plant, by TS Amendment No. 187 (TAC No. MA5612); Cooper Nuclear Station, by TS Amendment No. 192 (TAC No. MB2896); and Braidwood Station, Units 1 and 2, by TS Amendment Nos. 107 and 107 (TAC Nos. MA8512 and MA8513), respectively.

This letter contains no new regulatory commitments as reflected in Section 5.3 of Attachment 1.

A001

Pursuant to 10 CFR 50.91(b)(1), NMPNS has provided a copy of this license amendment request and the associated analyses regarding no significant hazards considerations to the appropriate state representative.

Very truly yours,

James A. Spina
Vice President Nine Mile Point

JAS/DEV/sac

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

I, James A. Spina, being duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this 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.

James A. Spina
Vice President Nine Mile Point

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 8th day of August, 2005.

WITNESS my Hand and Notarial Seal:

Lisa M. Clark
Notary Public

My Commission Expires: LISA M. CLARK Notary Public in the State of New York Oswego County Reg. No. 01CL6029220 My Commission Expires 8/9/2005

8/8/05
Date

Attachments:
1. Evaluation of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (Mark-up)
3. Explanation of the Emergency and Why the Situation Could Not Have Been Avoided

cc: Mr. S. J. Collins, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Mr. T. G. Colburn, Senior Project Manager, NRR (2 copies)
Mr. John P. Spath, NYSERDA

ATTACHMENT 1

EVALUATION OF PROPOSED TECHNICAL SPECIFICATION CHANGE

Subject: **License Amendment Request Pursuant to 10 CFR 50.90: Revision of Lake Water (Ultimate Heat Sink) Temperature Limit – Technical Specification 3.3.7**

1.0 DESCRIPTION

This letter is a request to amend Operating License DPR-63 for Nine Mile Point Unit 1 (NMP1). The proposed change would amend the Operating License to revise Technical Specification (TS) 3.3.7, "Containment Spray System," to increase the maximum lake water temperature limit from 81°F to 83°F. Lake Ontario serves as the ultimate heat sink (UHS) for the operating and decay heat produced by various plant components during normal operation, anticipated operational occurrences, and accidents.

A sustained period of unusually hot weather has caused the lake water temperature to approach the current TS limit of 81°F. If the lake water temperature were to exceed this limit, a plant shutdown would need to be initiated in accordance with TS 3.3.7. The proposed change would allow continued plant operation with a lake water temperature ≤ 83°F.

2.0 PROPOSED CHANGE

The proposed change revises TS 3.3.7.f to increase the maximum lake water temperature limit for the containment spray system from 81°F to 83°F. The proposed TS change is indicated on the mark-up page provided in Attachment 2. The current surveillance requirements in TS 4.3.7.f are not being revised, and the current TS Bases are not affected by these changes.

3.0 BACKGROUND

Lake Ontario serves as the ultimate heat sink for the operating and decay heat produced by various plant components during normal operation, anticipated operational occurrences, and accidents. As described in Updated Final Safety Analysis Report (UFSAR) Section III-F, lake water is drawn through an offshore intake structure, flows through the intake tunnel, is filtered by trash racks and screens, and enters the screenhouse intake forebays. The containment spray system, the emergency diesel generator (EDG) raw water cooling system, and the service water system transfer heat from plant components to the lake water. The pumps for these systems all take suction from the intake forebay in the screenhouse. The cooling water from these systems is returned to the discharge channel in the screenhouse, flows through the discharge tunnel, and returns to the lake through the discharge structure. In addition, the nonsafety-related circulating water system pumps and fire protection water (FPW) system pumps take suction from the screenhouse forebay.

The containment spray system is described in UFSAR Section VI-B. This system removes energy from the primary containment following a design basis loss of coolant accident (LOCA) to reduce containment pressure and temperature and maintain them below containment design pressure and temperature limits. The containment spray system pumps take suction from the torus. The pump discharge flow passes through the shell side of the containment spray heat exchangers, where it is cooled by raw lake water, and is then directed to the drywell and torus spray headers. Each of the four containment spray heat exchangers is supplied cooling water by a dedicated containment spray raw water pump that takes suction from the screenhouse forebay. After removing heat from the containment spray water, the raw water is returned to the screenhouse discharge channel.

The EDG raw water cooling system removes heat generated by operation of the EDGs. For each of the two EDGs, cooling water is supplied to the associated raw water cooling heat exchanger by a dedicated raw water pump that takes suction from the screenhouse forebay. After removing heat from the EDG coolant system, the raw water is returned to the screenhouse discharge channel. The EDG raw water cooling system pumps operate automatically any time that the associated EDG is running.

The service water system, described in UFSAR Section X-F, is a once-through system that supplies cooling water from Lake Ontario to various essential and non-essential components throughout the plant, as required, during normal plant operation, shutdown conditions, and accidents. The service water system provides cooling water to the following safety-related components:

- Reactor building closed loop cooling (RBCLC) heat exchangers

The service water system also provides cooling water to the following major nonsafety-related components:

- Turbine building closed loop cooling (TBCLC) heat exchangers
- Reactor building heating, ventilation, and air conditioning (HVAC) components
- Turbine building HVAC components
- Radwaste building area coolers
- Steam jet air ejector precoolers and vent cooler
- Screenwash pumps

The service water system consists of the two service water pumps, two emergency service water (ESW) pumps, strainers, and associated piping and valves. Each of the service water pumps is connected to a separate cooling water header. The two headers are normally cross-connected through a manual valved cross-tie. During normal plant operations, either of the two normal service water pumps provides sufficient cooling water to the main headers to satisfy plant cooling and non-cooling flow requirements. In the event of a loss of offsite power (LOOP), the normal service water pumps would be unavailable. Service water requirements for safety-related/essential equipment in the reactor building would be met by either of the two ESW pumps, which are powered from the emergency diesel generators. Each of the ESW pumps is connected to one of the service water supply lines to the RBCLC heat exchangers in the reactor building and can supply water to any one of the three RBCLC heat exchangers. Check valves in the service water supply headers prevent ESW flow to the turbine building sections of the header and to other non-critical components. The ESW portion of the service water system is safety-related.

During the summer of 2005, Lake Ontario water temperatures have closely approached the current TS maximum temperature limit of 81°F. If the lake water temperatures were to exceed this limit, a plant shutdown would need to be initiated in accordance with TS 3.3.7. The proposed change would allow continued plant operation with a lake water temperature of 83°F. Analyses and evaluations to support this increase are discussed in the next section.

4.0 TECHNICAL ANALYSIS

Engineering analyses have been performed to support plant operation with a 2°F increase in lake water temperature, from the current TS limit of 81°F to the proposed limit of 83°F. These analyses, summarized below, address the capability of affected structures, systems, and components to perform their safety functions, and the impact on accidents and transients addressed in the NMP1 UFSAR.

4.1 Containment Response Analysis for Large Break LOCA

The containment spray system provides the cooling required to maintain primary containment integrity following a LOCA. This system rejects heat to Lake Ontario (the UHS) through the containment spray heat exchangers to the containment spray raw water system, which draws lake water from the screenhouse intake forebay. Thus, the containment spray raw (lake) water temperature directly affects the heat removal capability of the containment spray heat exchangers.

4.1.1 Analysis Initial Conditions

- Torus Water Initial Temperature: The initial value of 85°F is in accordance with the TS 3.3.2.b limit. Operating experience has shown that the torus temperature has remained less than 80°F in summer months. The primary source of heat added to the torus is ambient heat from the reactor building and heating due to reactor coolant leakage such as relief valve leakage. The probability of requiring torus cooling to remove any significant heat load during normal operation coincident with elevated lake temperatures is considered low. The 2 degree differential temperature between the lake and torus temperatures is adequate to ensure that operations can maintain the torus less than the maximum allowable limit of 85°F. Therefore, the accident analysis initial condition is not affected.

- Drywell Initial Temperature: The drywell coolers are cooled by the RBCLC system. The drywell coolers are sized to remove rated heat load assuming less than 95°F RBCLC supply temperature. The RBCLC system has adequate margin to handle the normal operating loads and a 2°F increase in lake water temperature without exceeding the RBCLC maximum supply temperature of 95°F, as discussed in Section 4.4. Drywell average conditions are monitored to ensure the drywell is operated consistent with design and accident analysis assumptions. Therefore, the accident analysis initial condition is not affected.

4.1.2 Primary Containment Pressure Response

As described in UFSAR Sections VII-B.4.0 and XV-C.5.3, the containment spray raw water system is not immediately relied upon to limit the post-accident peak drywell or torus pressures. The suppression pool (torus) water provides the immediate post-accident pressure suppression function. The containment spray pumps start automatically on a LOCA signal. During the initial 15 minutes following the LOCA, no cooling water is supplied to the containment spray heat exchangers. Therefore, since the peak containment pressure occurs within approximately 60 seconds of the onset of a design basis LOCA, the lake water temperature increase does not impact the peak post-accident pressures. After the initial 15-minute period, the containment spray heat exchangers are cooled by the containment spray raw water pump flow (lake water) for long term containment pressure control. Since the small 2°F increase in the containment spray raw water temperature has an insignificant affect on containment spray flow droplet temperature, the long term pressure profile is not significantly impacted.

4.1.3 Torus Temperature Response

The maximum post-LOCA torus water temperature occurs within several hours following the onset of the LOCA. The torus temperature within the initial 15 minutes of the design basis large break LOCA reaches approximately 143°F. The containment spray system raw (lake) water supply to the containment spray heat exchangers is placed in service after this initial 15-minute period for the limiting LOOP assumption; thus, the lake water temperature has no impact on this short term maximum torus temperature.

Current Design Basis Analysis

The current design basis analysis of the long-term torus temperature response following a LOCA is described in UFSAR Section XV-C.5.3. This analysis was performed using the General Electric proprietary computer code, SHEX-04. The analysis assumed that one containment spray raw water pump is manually started, as follows:

- For the case using design basis assumptions, manual start of a containment spray raw water pump is assumed at 15 minutes following accident initiation. The peak calculated torus water temperature was 158.9°F at approximately 2.25 hours.

- For the case using assumptions based on operation in accordance with emergency operating procedures (EOPs), the operators evaluate plant conditions and perform the following actions: (1) terminate containment spray when drywell pressure drops below 3.5 psig; (2) initiate containment spray if the torus pressure increases above the suppression chamber spray initiation pressure; and (3) initiate torus cooling when the torus temperature is greater than 85°F. The peak calculated torus water temperature was 163°F at approximately 2.3 hours.

Re-Baselining of Current Design Basis Analysis

Earlier this year, the design basis SHEX analysis was revised to update NMP1-specific assumptions where appropriate, consistent with GE containment analysis methods, and also to incorporate corrections in the determination of decay heat values as identified in GE Service Information Letter (SIL) 636. All other assumptions remained unchanged from the previous analysis, including the assumed lake water temperature of 82°F (i.e., a one degree margin above the TS limit of 81°F). The reanalysis results were as follows:

- Design basis assumptions case - Peak calculated torus water temperature increased from 158.9°F to 160°F.

- EOP assumptions case - Peak calculated torus water temperature decreased from 163°F to 162.2°F.

These revised analysis results were incorporated into the design and licensing basis documents in accordance with 10 CFR 50.59.

Adjustments to Address Containment Spray Heat Exchanger Test Results

To account for containment spray heat exchanger performance monitoring results, the re-baselined analysis described above was further revised to adopt standard fouling assumptions for the containment spray heat exchangers. The heat exchanger performance coefficient (K) was reduced from 256 Btu/sec-°F (the value assumed in the current UFSAR analysis - see UFSAR Table XV-32a) to 235 Btu/sec-°F (a value that is more consistent with Tubular Exchanger Manufacturers Association (TEMA) fouling assumptions for Great Lakes water), with lake water still assumed to be 82°F. This resulted in an increase in the peak calculated torus water temperature from 160°F to 163.8°F for the design basis assumptions case, and from 162.2°F to 164.9°F for the EOP assumptions case. These revised analysis results were also incorporated into the design and licensing basis documents in accordance with 10 CFR 50.59.

Analysis to Evaluate Lake Water Temperature Increase

The 2°F increase in maximum allowable lake water temperature for this amendment request was evaluated based on maintaining the maximum analyzed peak torus water temperature of less than 165°F. The 165°F value is the temperature at which pump net positive suction head (NPSH) and pipe support thermal loads were previously evaluated. The evaluation was performed at a lake water temperature of 84°F to maintain the same one degree margin to the TS limit as was applied in the current design basis analysis. To compensate for the 2°F increase while maintaining the peak torus water temperature less than 165°F, the required heat exchanger performance coefficient is increased from 235 Btu/sec-°F to 241 Btu/sec-°F. With this adjustment, peak calculated torus water temperature is 163.8°F for the design basis assumptions case, and 164.9°F for the EOP assumptions case. The increased heat exchanger performance requirement is justified based on a review of the heat exchanger performance testing, existing preventive maintenance practices, and previous physical plant modifications. Also, since the containment spray heat exchangers only support the post-accident cooling function and do not perform any other function, they are normally maintained in a standby lineup with the raw (lake) water drained. The heat exchanger duty is low, and adequate margin is maintained such that the existing two-year preventive maintenance cleaning cycle is not impacted by the increased heat exchanger performance coefficient requirement.

4.1.4 Core Spray Pumps and Containment Spray Pumps

As discussed above, no containment heat removal via the containment spray raw water system is assumed during the initial 15-minute time period following the onset of the LOCA, when core spray and containment spray flows are at a maximum. The increased lake water temperature only impacts the long-term peak torus water temperature, which occurs several hours after accident initiation when core spray and containment spray flows have been reduced from their maximum short-term values. As a result, the 2°F increase in lake water temperature only impacts the core spray and containment cooling pump NPSH assessments performed for the long-term peak torus water temperature condition. Since the peak calculated long-term torus water temperature remains below 165°F (the value at which NPSH was previously evaluated), the NPSH evaluations for the core spray and containment spray pumps remain unchanged. The NPSH available remains greater than required, assuming zero containment overpressure and maximum suction strainer loading.

The core spray and containment spray pump seals and motor bearings are cooled by the torus water. Pump seal and motor bearing cooling is adequate for the maximum calculated torus water temperature of 165°F; therefore, the 2°F increase in lake water temperature has no impact on the core and containment spray pump seal and bearing cooler capability.

4.2 Containment Spray Raw Water System

Significant NPSH margin is available for the containment spray raw water system pumps. The minimum available NPSH for these pumps, based on minimum screenhouse forebay level and a lake water temperature of 81°F, is 40.1 ft, versus a required NPSH of 31 ft at design flow. The 2°F increase in lake water temperature represents an insignificant decrease in the NPSH available (less than 0.1 ft). Therefore, containment spray raw water system pump operability would not be adversely affected by the 83°F lake water temperature.

With regard to the containment spray raw water system piping and pipe supports, the 2°F increase in lake water temperature represents an insignificant change which has no impact on the piping or pipe operating stress. A lake water temperature of 83°F remains well below the piping design temperature rating of 100°F. Raising the lake water temperature 2°F will not adversely affect the structural integrity of the piping and pipe supports.

4.3 EDG Raw Water Cooling System

Each EDG starts automatically on loss of voltage on the emergency bus to which it is connected. The EDG raw water cooling system pumps operate automatically any time that the associated EDG is running. The EDG raw water heat exchangers are designed for a maximum lake water temperature of 88°F. Thus, there is ample margin for ensuring EDG operability at 83°F lake water temperature without impacting shell side (i.e., engine coolant system) temperatures.

Significant NPSH margin is available for the EDG raw water cooling system pumps. The minimum available NPSH for these pumps, based on minimum screenhouse forebay level and a lake water temperature of 85°F, is 39 ft, versus a required NPSH of 26 ft at rated flow. Therefore, EDG raw water cooling system pump operability would not be adversely affected by the 83°F lake water temperature.

With regard to the EDG raw water cooling system piping and pipe supports, the 2°F increase in lake water temperature represents an insignificant change which has no impact on the piping or pipe operating stress. Lake water temperature of 83°F remains well below the piping design temperature rating of 100°F. Raising the lake water temperature 2°F will not adversely affect the structural integrity of the piping and pipe supports.

4.4 Service Water/Emergency Service Water System

The service water system provides cooling water to the reactor building closed loop cooling (RBCLC) heat exchangers. The RBCLC system, described in UFSAR Section X-D, provides cooling water, typically at 85°F to 95°F, for auxiliary equipment located in the reactor building, turbine building, and waste disposal building. Safety-related and important-to-safety loads cooled by the RBCLC system are:

1. Instrument air compressors
2. Electric feedwater pumps, feedwater booster pumps, and condensate pumps, which perform the high pressure coolant injection (HPCI) function
3. Control room HVAC equipment
4. Post-accident sample cooler
5. Fuel pool heat exchangers

The RBCLC system also provides cooling for the following major nonsafety-related components:

1. Reactor recirculation pump coolers
2. Reactor cleanup system nonregenerative heat exchangers
3. Reactor building equipment drain tank cooler
4. Drywell air coolers
5. Waste disposal system heat exchangers
6. Shutdown cooling system heat exchangers and pump coolers
7. Offgas vacuum pump coolers

The RBCLC water exiting the heat exchangers is monitored and automatically controlled by a temperature controller that simultaneously regulates the RBCLC flow through the shell side of the heat exchangers and the service water system flow through the tube side of the heat exchangers. The service water flow is normally supplied by the service water pumps, with the capability of using the safety-related ESW pumps in the event of a LOOP, or a LOCA coincident with a LOOP.

The bounding case for demonstrating the ability of the RBCLC system to provide cooling to the safety-related loads is a LOOP that includes a conservative spent fuel pool cooling load based on a full reactor core offload. This case represents the highest RBCLC and ESW accident cooling and bounds the normal safe shutdown cooling load. The analysis for this case determined that the maximum allowable lake water temperature to maintain a 95°F RBCLC supply temperature is 88°F. Therefore, the 2°F increased in lake water temperature, from 81°F to 83°F, will not affect the ability of the RBCLC system to provide the required cooling for safety-related loads and loads required for safe shutdown conditions assuming a LOOP.

Significant NPSH margin is available for the ESW pumps. The minimum available NPSH for these pumps, based on minimum screenhouse forebay level and a lake water temperature of 85°F, is 39 ft, versus a required NPSH of 25 ft at rated flow. Therefore, ESW pump operability would not be adversely affected by the 83°F lake water temperature.

With regard to the SW/ESW system piping and pipe supports, the 2°F increase in lake water temperature represents an insignificant change which has no impact on the piping or pipe operating stress. Lake water temperature of 83°F remains well below the piping design temperature rating of 120°F. Raising the lake water temperature 2°F will not adversely affect the structural integrity of the piping and pipe supports.

4.5 Other Safety Analysis Considerations

4.5.1 LOCA Peak Clad Temperature

The torus is the source of injection water used for core cooling following a LOCA. As discussed in Section 4.1 above, the 2°F increase in lake water temperature does not increase either the short-term or long-term calculated maximum torus water temperature following a LOCA. Therefore, the core spray system cooling capacity assumed in the LOCA analysis is not changed and the 2°F increase in lake water temperature has no impact on the peak clad temperature.

4.5.2 Anticipated Transient Without Scram (ATWS) - Suppression Pool Temperature Response

The ATWS calculated maximum bulk torus water temperature is 157°F based on an assumed maximum containment spray raw (lake) water temperature of 85°F. Thus, the proposed 83°F maximum lake water temperature is bounded by the existing ATWS analysis assumptions.

4.5.3 Safe Shutdown

The existing design basis evaluation of safe shutdown capability credits the nonsafety-related shutdown cooling system, which is described in UFSAR Section X-A. The shutdown cooling system rejects heat to the RBCLC system, which rejects the heat to the lake water via the service water system. The ability of the shutdown cooling system to support normal and emergency shutdown capability (i.e., Technical Specification required 10-hour shutdown) is dependent on the ability of the RBCLC to maintain the cooling water at a temperature less than 95 degrees to the shutdown cooling heat exchangers. Evaluation of the limiting 10-hour shutdown heat load case has determined that the RBCLC system is capable of maintaining the cooling water supply temperature to the shutdown cooling heat exchangers less than 95 degrees with a lake water temperature of 83°F. Plant operating procedures provide adequate guidance for operators to adjust the RBCLC heat exchanger bypass flow as necessary to maintain the desired RBCLC outlet temperature. Therefore, the ability to achieve the Technical Specification required 10-hour shutdown is maintained with the 2°F increase in lake water temperature.

4.5.4 Station Blackout

The NMP1 station blackout (SBO) scenario is based on a 4-hour coping period assuming loss of the offsite power and failure of the emergency diesel generators. As a result, the SBO analyses for the primary containment, reactor building (secondary containment), and control room heatup do not credit the cooling capability of any system that uses lake water as the cooling medium. The emergency condensers provide the decay heat removal required to maintain the reactor in a safe shutdown condition. The emergency condensers do not rely on lake water for cooling. The emergency condenser shells, together with the emergency condenser makeup tank, contain sufficient water to provide for decay heat removal for at least 4 hours. The SBO analysis also credits the diesel fire pump for reactor makeup to cope with an assumed reactor recirculation pump seal failure condition. The diesel fire pump draws lake water from the screenhouse forebay. The 2°F increase in the lake water temperature has an insignificant impact on the available NPSH for the diesel fire pump, as noted in Section 4.5.5 below.

The Appendix R event, discussed in Section 4.5.5, evaluates the control room heatup and is the bounding analysis for both the SBO and the Appendix R events.

4.5.5 10 CFR 50 Appendix R

As discussed in UFSAR Appendix 10B, 10 CFR 50 Appendix R requires demonstrating that reactor safe shutdown and cold shutdown within 72 hours can be achieved for fire events, with or without offsite power available. This is accomplished through appropriate operator actions and/or damage repair procedures of the diesel generators or through alternate options. The hot shutdown condition is achieved by the use of either (1) the emergency condensers or (2) the electromatic relief valves (ERVs) with the core spray, containment spray, and containment spray raw water systems. The cold shutdown condition is achieved using either (1) the shutdown cooling system with the RBCLC, ESW, and control rod drive hydraulic systems, or (2) the ERVs with the core spray, containment spray, and containment spray raw water systems. Achieving cold shutdown relies on transfer of heat to the lake water by either the ESW system or the containment spray raw water system.

The decay heat removal options using containment spray raw water use the heat capacity of the torus in combination with the containment spray system. These systems are sized and analyzed based on the design basis LOCA. The design basis LOCA assessment of the impact of the 2°F increase in lake water temperature is discussed in Section 4.1 and is bounding for this Appendix R function.

The limiting decay heat removal condition for the scenarios that credit the shutdown cooling, RBCLC, and ESW systems occurs for the case when EDG 103 is the recovered diesel generator, since only one of the three shutdown cooling pumps is powered from EDG 103. This limits the heat removal to one shutdown cooling pump and heat exchanger. The RBCLC flow and ESW flow are sufficient to maintain heat removal rates via the shutdown cooling heat exchanger within the analysis assumptions. Greater margin exists to achieve the 72-hour cooldown when EDG 102 is the recovered diesel generator, since two shutdown cooling heat exchangers will be available. In either case, the 2°F increase in lake water temperature has no impact on the ability to achieve cold shutdown within 72 hours.

The Appendix R event evaluates the control room heatup, which is the bounding analysis for both the SBO and the Appendix R events. The lake water temperature change impacts this analysis by potentially impacting the initial conditions. The turbine building and the reactor building have area coolers cooled by service water. The area cooler outlet air temperature will be increased by the higher service water temperatures. An assessment of the impact of the increased service water temperature has concluded that the critical building area temperatures remain within the baseline initial condition assumptions of the control room heatup analyses for Appendix R and SBO. In addition, the analysis for both Appendix R and SBO indicates at least a 10°F margin to the applicable 120°F limit. Therefore, the existing analyses bound the impact of the 2°F increase in lake water temperature.

The fire protection system uses lake water that is pumped through the fire protection water pumps. Significant NPSH margin is available for the fire water pumps. The minimum available NPSH for these pumps, based on minimum screenhouse forebay level and a lake water temperature of 85°F, is 39 ft, versus a required NPSH of 34 ft (reference datum is centerline elevation of 1st stage impeller). The 2°F change in lake temperature has an insignificant (less than 0.1 ft) impact on the available NPSH. Therefore, fire water pump operability would not be adversely affected by the 83°F lake water temperature.

With regard to the fire water system piping and pipe supports, the 2°F increase in lake water temperature represents an insignificant change which has no impact on the piping or pipe operating stress. Lake water temperature of 83°F remains well below the piping design temperature rating of 100°F. Raising the lake water temperature 2°F will not adversely affect the structural integrity of the piping and pipe supports.

4.5.6 Equipment Qualification (EQ)

The post-accident primary containment (drywell and torus) temperature and pressure maximum values are not changed by the 2°F increase in lake water temperature, as discussed in Section 4.1. The long-term post-accident containment temperature profile is slightly changed with regard to the duration of the elevated temperatures. However, this change in the long term profile is on the order of 1 to 2°F and is not a significant change that impacts the equipment qualification for post-accident mitigation.

The EQ equipment located in the reactor building, the turbine building, and the control room is qualified based on normal ambient operating conditions and high energy line break temperature profiles. The safety related and important-to-safety cooling loads such as the control room are cooled by the RBCLC system. The 2°F increase in lake water temperature has no impact on the ability of the RBCLC system to supply cooling flow at a temperature of less than 95°F used for the design basis assessments.

The turbine building and the reactor building have area coolers cooled by service water. The area cooler outlet air temperature will be increased by the higher service water temperatures. An assessment of the impact of the increased service water temperature has concluded that the critical building area temperatures remain within the baseline and the overall EQ assessments.

4.6 Conclusions

Engineering analyses and evaluations have been performed to demonstrate that NMP1 can safely operate with a 2°F increase in lake water temperature (up to the proposed TS limit of 83°F), and that systems that use lake water as a heat sink can continue to perform their intended safety functions without any undue risk to the health and safety of the public.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration Analysis

Nine Mile Point Nuclear Station, LLC (NMPNS) is requesting a revision to Facility Operating License No. DPR-63 for Nine Mile Point Unit 1 (NMP1). The proposed change would revise Technical Specification (TS) 3.3.7, "Containment Spray System," to increase the maximum lake water temperature limit from 81°F to 83°F. Lake Ontario serves as the ultimate heat sink (UHS) for the containment spray system and other NMP1 safety-related systems.

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 change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change allows plant operation to continue with a maximum lake water temperature of 83°F. This 2°F increase in allowable lake water temperature will not affect the normal operation of the plant to the extent that it would make any accident more likely to occur. The lake water temperature is not itself an accident initiator, and raising the maximum temperature limit does not involve any plant hardware changes or new operator actions that could serve to initiate an accident. The potential impact of the proposed change on the ability of the plant to mitigate postulated accidents has been analyzed. These analyses demonstrate that safety-related systems and components that rely on lake water as the cooling medium are capable of performing their intended safety functions at the higher lake water temperature, and that containment integrity and equipment qualification are maintained. Thus, the proposed change will have no adverse effect on plant operation, or the availability or operation of any accident mitigation equipment. Therefore, there will be no 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 change does not introduce any new modes of plant operation and will not result in a change to the design function or operation of any structure, system, or component that is used for accident mitigation. The proposed lake water temperature increase does not result in any credible new failure mechanisms, malfunctions, or accident initiators not considered in the design and licensing basis. The engineering analyses performed to support the proposed change demonstrate that affected safety-related systems and components are capable of performing their intended safety functions at the elevated lake water temperature. Therefore, the proposed change will 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.

NMPNS has performed an evaluation of the affected safety systems to ensure their safety functions can be met with a lake water temperature of 83°F. The higher lake water temperature represents a slight reduction in the design margins in terms of the ability of affected systems to remove accident heat loads. However, as part of the evaluation, it was verified that these safety systems will still be capable of performing their intended safety functions. The proposed change will have no adverse effect on plant operation or equipment important to safety. The plant responses to accidents will not be significantly affected and the accident mitigation equipment will continue to function as assumed in the accident analysis. Therefore, there will be no significant reduction in a margin of safety.

Based on the above, NMPNS concludes that the proposed amendment presents no 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.

5.2 Applicable Regulatory Requirements/Criteria

Based on the considerations discussed above evaluating the proposed change per the requirements of 10 CFR 50.91 and 50.92, (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.

5.3 Commitments

The following table identifies those actions committed to by NMPNS in this submittal. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

REGULATORY COMMITMENTS	DUE DATE
None	None

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. The change will involve an increase in the plant effluent discharge temperature to Lake Ontario; however, the maximum discharge temperature permitted by the New York State Pollutant Discharge Elimination System (SPDES) permit will not be exceeded. 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.

ATTACHMENT 2

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

The current version of Technical Specification page 161 has been marked-up by hand to reflect the proposed change.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
f. The containment spray system shall be considered operable by verifying that lake water temperature does not exceed ~~81~~ 83°F.	f. Lake Water Temperature Record at least once per 24 hours, and at least once per 8 hours when latest recorded water temperature is greater than or equal to 75°F and at least once per 4 hours when the latest recorded water temperature is greater than or equal to 79°F.
g. If specification "f" cannot be met commence shutdown within one hour and be in hot shutdown within 8 hours and cold shutdown within 24 hours.	

ATTACHMENT 3

EXPLANATION OF THE EMERGENCY AND WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED

The reason for the emergency is that unusually prolonged hot weather in the area has resulted in elevated Lake Ontario temperatures. High temperatures during the daytime, in conjunction with little cooling at night, have resulted in elevated Lake Ontario temperatures. The recent weather conditions have resulted in lake temperatures exceeding the anticipated temperature trends based upon lake temperature measurements from previous years. On August 4, 2005, the lake temperature peaked within 2°F of the limit. We foresee the possibility that the lake water temperature may exceed the current 81°F limit during periods of sustained hot weather conditions over the next seven days and the remaining summer months. In addition, there are no controllable measures that can be taken to immediately reduce the temperature of the lake.

These recent meteorological conditions have caused an elevated lake water temperature beyond the control of the plant and the opportunity to make a timely application does not exist, therefore an emergency situation exists.