ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. NPF-69
DOCKET NO. 50-410

PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS

Replace existing page 3/4 6-43 with the attached revised page. This page has been retyped in its entirety with marginal markings to indicate changes to the text.

003213LL

CONTAINMENT SYSTEMS

SECONDARY CONTAINMENT

STANDBY GAS TREATMENT SYSTEM

LIMITING CONDITIONS FOR OPERATION

3.6.5.3 Two independent standby gas treatment (SGTS) subsystems shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and *.

ACTION:

a. With one standby gas treatment subsystem inoperable:

1. In OPERATIONAL CONDITION 1, 2 or 3, suspend all VENTING or PURGING of the drywell and/or suppression chamber** within 30 minutes, and restore the inoperable subsystem to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

2. In OPERATIONAL CONDITION *, restore the inoperable subsystem to OPERABLE status within 7 days, or place the operable SGTS subsystem in operation or suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS, and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable. The provisions of Specification 3.0.4 are not applicable provided an operable SGTS subsystem is in operation.

b. With both standby gas treatment subsystems inoperable:

1. In OPERATIONAL CONDITION 1, 2, or 3, suspend all operations involving VENTING, PURGING, or pressure control of the drywell or suppression chamber and initiate action within 1 hour to be in at least HOT SHUTDOWN within the next 12 hours, and in COLD SHUTDOWN within the following 24 hours.

2. In OPERATIONAL CONDITION *, suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS or operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3. are not applicable.

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* When irradiated fuel is being handled in the reactor building and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

** The requirement to suspend VENTING or PURGING with one inoperable SGTS subsystem shall not apply to the use of valves 2CPS*AOV108 (14-inch) and 2CPS*AOV110 (14-inch), or 2CPS*AOV109 (12-inch) and 2CPS*AOV111 (12-inch), for primary containment pressure control, provided 2GTS*AOV101 is closed, and its 2-inch bypass line is the only flow path to the standby gas treatment system.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. NPF-69
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SUPPORTING INFORMATION AND
NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

1.0 INTRODUCTION

This application for amendment to the NMP2 operating license proposes two changes to action statement a.2 of Limiting Condition of Operation (LCO) 3.6.5.3 of the Technical Specifications. The current version and the proposed changes to action statement a.2 are provided below in Section 2.0.

The action statement a.2 applies to an operational condition defined as: activities involving the movement of irradiated fuel in the reactor building, core alterations and operations with a potential for draining the reactor vessel. With one Standby Gas Treatment System (SGTS) subsystem inoperable, the current action statement permits those activities described above to continue for up to seven days.

The first proposed change to action statement a.2 would permit the activities described above to continue beyond seven days with one SGTS subsystem inoperable provided the operable SGTS subsystem is in operation. The second proposed change would exempt action statement a.2 of LCO 3.6.5.3 from the requirements of LCO 3.0.4. This would allow entry into the above defined operational condition for LCO 3.6.5.3 with an SGTS subsystem inoperable provided the operable SGTS subsystem is in operation. These proposed changes are consistent with the improved Technical Specifications developed by the Nuclear Regulatory Commission (NRC) and Boiling Water Reactor Owners' Group (BWROG) as presented in NUREG-1433.

2.0 DESCRIPTION OF PROPOSED TECHNICAL SPECIFICATION CHANGE

NMPC proposes two changes to action statement a.2 of LCO 3.6.5.3 for the SGTS. The current version and the proposed changes are:

Current Version of Action Statement a.2

In OPERATIONAL CONDITION *, restore the inoperable subsystem to OPERABLE status within 7 days, or suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS, and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.

* When irradiated fuel is being handled in the reactor building and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

Proposed Change to Action Statement a.2

In OPERATIONAL CONDITION *, restore the inoperable subsystem to OPERABLE status within 7 days, or place the operable SGTS subsystem in operation or suspend handling of irradiated fuel in the reactor building, CORE ALTERATIONS, and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable. The provisions of Specification 3.0.4 are not applicable provided an operable SGTS subsystem is in operation.

* When irradiated fuel is being handled in the reactor building and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

3.0 EVALUATION

The SGTS is designed to preclude the direct release of radioactivity from the reactor building to the environment. The SGTS is composed of two 100% capacity subsystems. Each subsystem contains an air filtration train, an exhaust fan, a recirculation line with a flow control valve and associated piping, valves and controls. The recirculation line circulates air from the discharge of the exhaust fan to the intake of the filter train. Each subsystem has a rated capacity of approximately 4000 cfm.

The SGTS, in accordance with LCO 3.6.5.3, is required to be operable during operational conditions 1, 2, 3 and *. The asterisk condition is defined as: activities involving the movement of irradiated fuel in the reactor building, core alterations and operations with a potential for draining the reactor vessel. This LCO requires two SGTS subsystems to be operable during the * operational condition. The proposed changes are to action statement a.2 of LCO 3.6.5.3 for the SGTS. Since this action statement is for the * operational condition, the subsequent discussion evaluates safety concerns during this operational condition.

During the * operational condition, secondary containment is maintained at a pressure equal to or more negative than a -0.25 inch water gauge with respect to the surrounding outside atmosphere. Secondary containment consists of the reactor building and auxiliary bay structures. During normal operation, the SGTS is not running and this negative pressure within secondary containment is maintained by a normal air ventilation system. This normal ventilation system does not have the capability to filter radioactivity from the discharged air. If the radiation level within the secondary containment exceeds a predetermined limit, as detected above or below the refueling floor, the normal ventilation system is automatically stopped. In addition, the normal ventilation system's supply and discharge flow path are automatically closed, thereby isolating the secondary containment from the outside environment, and the SGTS is automatically started. The SGTS re-establishes and maintains secondary containment at a pressure equal to or more negative than -0.25 inch water gauge with respect to the surrounding atmosphere and provides a filtered release to the environment. The flow control valve in the recirculation line around each SGTS subsystem's filtration train and exhaust fan automatically modulates to maintain an adequate negative pressure in secondary containment.

An accident during the * operational condition could result in the release of radioactivity to the secondary containment atmosphere. The movement of irradiated fuel involves the possibility of a fuel bundle drop accident. Core alterations involve the movement of components within the reactor vessel which could result in a challenge to the integrity of a fission product barrier, such as fuel cladding. Operations with a potential for draining the reactor pressure vessel could also result in a challenge to the integrity of a fission product barrier, due to the unanticipated lowering of water level. The possibility of these events occurring is minimized by the design of the facility and the use of controlled procedures.

In the event of the release of radioactivity to the secondary containment atmosphere, the normal ventilation system would trip, secondary containment would isolate and the SGTS would start automatically. With the secondary containment atmosphere isolated and at least one SGTS subsystem running, the secondary containment atmosphere would be filtered by the SGTS subsystem, thereby mitigating the consequences of the event.

In accordance with the current Technical Specification, if one SGTS subsystem becomes inoperable, then the above activities may continue for up to seven days provided the other SGTS subsystem is operable. At the end of seven days, either the inoperable SGTS subsystem must be restored to operability or activities which involve the movement of irradiated fuel, core alterations and operations with a potential for draining the reactor pressure vessel must be stopped. These provisions of the Technical Specifications minimize the possibility of the release of radioactivity to the environment without concurrent operation of an SGTS subsystem.

NMPC proposes a change to Technical Specification action statement a.2 which would allow continuation of the above activities with a SGTS subsystem inoperable beyond seven days provided the operable SGTS subsystem is in operation. In support of this change request, a plant-specific probability risk assessment (PRA) was performed to evaluate the probability of a bundle drop event resulting in a need to start the SGTS with a concurrent failure of the SGTS that would result in an unfiltered ground level release. The probability of a bundle drop event and a concurrent SGTS failure is 4.0×10^{-7} under current technical specifications and 9.0×10^{-7} under the proposed technical specification change. This risk increase is less than an order of magnitude. In addition, the order of magnitude of overall risk is extremely small.

By placing the operable SGTS subsystem in operation, active single failures associated with its startup have been eliminated. These eliminated failures include automatic initiation instrumentation, relaying logic, breaker operation, fan operation, and valve operation. With an operable SGTS subsystem in operation, its safety function is being performed. In addition, the status of the operating SGTS subsystem is indicated in the control room. Therefore, the running, operable SGTS subsystem provides a level of safety equivalent to two non-running, operable SGTS subsystems.

For operation under the current Technical Specifications, the probability of a draining of the reactor vessel resulting in a need to start the SGTS with a concurrent failure of the SGTS that would result in an unfiltered ground level release is less than 10^{-7}. This is based on a qualitative assessment that considers the more numerous failures that must occur to achieve an initiating event to start the SGTS for a draindown event as compared to a fuel bundle drop event. For a draindown event to uncover the fuel, a human or hardware failure must occur to breach a line that interfaces with the reactor vessel below the top of the fuel, any backup protective devices must fail, and personnel must fail to notice the leak or are ineffective in securing the leak. In comparison, for the bundle drop, a failure of the grapple or human failure

accompanied by a fuel rod cladding rupture is all that needs to occur to require starting the SGTS.

In addition, this conclusion is based on the consideration of plant procedures, plant design, Technical Specification LCOs, Technical Specification surveillances and training. These items are discussed in greater detail below.

(1) Procedures are used to control activities involving operations with a potential for draining the reactor vessel. These procedures and their changes receive appropriate safety reviews.

(2) The fuel residing in the reactor vessel is fully covered with water at all times. The water is retained by a pressure boundary formed by the reactor vessel and its attached piping with isolation valves. Due to the substantial design margin provided by this pressure boundary during nonpressurized conditions, a failure of this pressure boundary is extremely unlikely.

During operations with a potential for draining the reactor vessel, an inadvertent draindown of the reactor vessel would likely be terminated prior to uncovering the fuel by the automatic actuation of isolation valves in piping connected to the reactor vessel. In addition, significant additional water can be provided to the reactor by one or more of the following:

(a) a flooded refueling cavity
(b) a flooded spent fuel pool with the refueling gates removed
(c) a flooded equipment storage pool with the gates removed
(d) emergency core cooling pumps
(e) condensate system
(f) service water system
(g) fire protection system

A decrease in water level in the refueling cavity would be detected by personnel on the refueling floor. Operators could then take actions to terminate the draindown event as well as using plant systems to provide makeup water.

(3) Plant Technical Specification LCOs and associated surveillances address equipment and activities involving operations with a potential for draining the reactor vessel. These Technical Specification requirements prevent these activities from being performed until equipment operability and certain other criteria are satisfied. Some of these LCOs are:

(a) LCO 3.3.2, Isolation Actuation Instrumentation
(b) LCO 3.3.3, Emergency Core Cooling System Actuation Instrumentation
(c) LCO 3.5.2, ECCS-Shutdown
(d) LCO 3.7.1.2, Plant Service Water System-Shutdown
(e) LCO 3.9.8, Water Level - Reactor Vessel

(4) Training is provided to individuals who would perform operations with a potential for draining the reactor vessel. This training includes the use of plant procedures and equipment and emphasizes the importance of following approved procedures.

Based upon the above considerations, an order of magnitude less initiating frequency is concluded to exist for the rupture of fuel rods due to a reactor vessel draindown event as compared to a fuel bundle drop event.

Similar considerations can be made for core alterations. Core alteration errors can occur if a fuel bundle is improperly loaded or a control rod is inadvertently withdrawn. Control rod and fuel bundle movement are controlled by procedures. To rupture the cladding of a fuel bundle from a criticality excursion, operators would have to fail to properly control fuel bundle and/or control rod movement. An inadvertent criticality is caused by the creation of two interior adjacent loaded uncontrolled fuel cells during fuel loading. A loaded uncontrolled fuel cell is a control cell with four fuel bundles loaded, without a control rod inserted in the cell. A probabilistic risk analysis of the complete spiral core offload/reload sequence was performed to determine the probability of a criticality excursion. The results demonstrate that the probability of such an event is very low for cores containing General Electric fuel, i.e. $< 10^{-8}$. When the probability of a criticality excursion is multiplied by the probability of either two operable, non-running SGTS subsystems failing to start or an operable, running SGTS stopping, the resultant probability approaches zero.

Based upon the above evaluation, it is concluded that the probability of a fuel bundle drop event as compared to either core alterations or operations with a potential for draining the reactor vessel resulting in a need to start the SGTS concurrent with a failure of the SGTS that would result in an unfiltered ground level release is higher. Accordingly, from a probabalistic perspective, a fuel bundle drop event is bounding.

Section 15.7.4 of the Updated Safety Analysis Report (USAR) discusses a fuel bundle drop accident. The calculated exposures from this accident, as shown in USAR Table 15.7-12, are a small fraction of the guidelines of 10 CFR Part 100 and less than the GDC-19 value for the control room. Although the reactor building ventilation system would isolate on a high radiation signal and the SGTS would start, no credit is taken in the radiological calculation for the SGTS filtration or an elevated release.

Without the SGTS running, in the event of the release of radioactivity to secondary containment, a portion of this radioactivity is released to the environment as an unfiltered ground level release before the normal ventilation system is tripped, secondary containment is isolated and the SGTS is started. With an SGTS subsystem running prior to the release of radioactivity to the secondary containment, the SGTS startup delay is eliminated, thereby decreasing the amount of radioactivity released to the environment.

Therefore, the radiological consequences of a fuel bundle drop event as analyzed in the USAR are unaffected by this proposed technical specification change.

In addition, NMPC is requesting a second Technical Specification change that would exempt action statement a.2 of LCO 3.6.5.3. from the provisions of LCO 3.0.4. LCO 3.0.4 states:

> "Entry into an OPERATIONAL CONDITION or other specified condition shall not be made unless the conditions for the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION requirements. This provision shall not prevent passage through or to OPERATIONAL CONDITIONS as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual specifications."

This change would allow entry into the * operational condition while in action statement a.2 provided a SGTS subsystem is operable and in operation. This change does not present any safety concerns based upon the following:

1) The plant specific PRA demonstrates that an equivalent level of safety is provided by an operable, running SGTS subsystem as compared to two operable, non-running SGTS subsystems.

2) Section 15.7.4 of the USAR evaluates a fuel bundle drop accident. This evaluation does not take credit for SGTS filtration. Therefore, this Technical Specification change is conservative with regard to the USAR and its supporting analysis.

3) NMPC has a preventative maintenance program for the SGTS. This program helps to maximize the reliability of the SGTS.

Therefore, based upon the above analysis, entry into the * operational condition for LCO 3.6.5.3 with one SGTS subsystem inoperable and the other SGTS subsystem operable and in operation is acceptable.

These proposed changes are consistent with the improved Technical Specifications developed by the NRC and the BWROG as presented in NUREG-1433.

4.0 CONCLUSION

The Standby Gas Treatment System (SGTS) functions to mitigate the consequences of a release of radioactivity by providing a filtered elevated release.

In accordance with Limiting Condition of Operation (LCO) 3.6.5.3, with one SGTS subsystem inoperable, the * operational condition defined as: activities involving the movement of irradiated fuel, core alterations and operations with a potential for draining the reactor vessel is allowed for an additional seven days, at which time these activities must be stopped. The change to action statement a.2 of LCO 3.6.5.3 would allow these activities to continue beyond seven days provided the operable SGTS subsystem is in operation.

In support of this change request, a plant-specific probability risk assessment (PRA) was performed. The probability of a bundle drop event resulting in a need to start the SGTS with a concurrent failure of the SGTS that would result in an unfiltered ground level release is 4.0×10^{-7} under current Technical Specifications and 9.0×10^{-7} under the proposed Technical Specification change. This risk increase is less than an order of magnitude. In addition, the order of magnitude of overall risk is extremely small.

The probability of a draindown of the reactor vessel resulting in a need to start the SGTS with a concurrent failure of the SGTS that would result in an unfiltered ground level release is less than 10^{-7}. This is based on a qualitative assessment that considers the more numerous failures that must occur to achieve an initiating event to start the SGTS for a draindown event as compared to a fuel bundle drop event. In addition, this conclusion is based on the consideration of plant procedures, plant design, Technical Specification LCOs, Technical Specification surveillances and training.

In addition, the probability of a core alteration resulting in a need to start the SGTS concurrent with a failure of the SGTS that would result in an unfiltered ground level release is less than 10^{-7}. This conclusion is based upon a PRA which determines the probability of a criticality excursion during the complete spiral core offload/reload sequence for General Electric fuel.

It is concluded that the probability of a fuel bundle event as compared to either core alterations or operations with a potential for draining the reactor vessel resulting in a need to start the SGTS concurrent with a failure of the SGTS that would result in an unfiltered ground level release is higher. Accordingly, from a probablistic perspective, a fuel bundle drop event is bounding.

By placing the operable SGTS subsystem in operation, active single failures associated with its startup have been eliminated. These eliminated failures include automatic initiation instrumentation, relaying logic, breaker operation, fan operation, and valve operation. With an operable SGTS subsystem in operation, its safety function is being performed. In addition, the status of the running SGTS subsystem is indicated in the control room. Therefore, the running, operable SGTS subsystem provides a level of safety equivalent to two non-running, operable SGTS subsystems.

In addition, the change would allow entry into the* operational condition of LCO 3.6.5.3 while relying on the provisions contained in the above proposed change to the action statement. Entry into the * operational condition for LCO 3.6.5.3 with one SGTS subsystem inoperable and the other SGTS subsystem operable and running provides an acceptable level of safety for the above activities based upon the above analysis.

Section 15.7.4 of the USAR discusses a fuel bundle drop accident. The calculated exposures from this accident, as shown in USAR Table 15.7-2, are a small fraction of the guidelines of 10 CFR Part 100 and less than the GDC-19 limit. Although the reactor building ventilation system would isolate on a high radiation signal and the SGTS would start, no credit is taken in the radiological calculation for the SGTS filtration or an elevated release. Therefore, the radiological consequences of a fuel bundle drop event as analyzed in the USAR are unaffected by the proposed Technical Specification changes.

Without the SGTS running, in the event of the release of radioactivity to secondary containment, a portion of this radioactivity is released to the environment as an unfiltered ground level release before the normal ventilation system is tripped, secondary containment is isolated and the SGTS is started. With an SGTS subsystem running prior to the release of radioactivity to the secondary containment, the SGTS startup delay is eliminated, thereby decreasing the amount of radioactivity released to the environment.

These changes are consistent with the improved Technical Specifications developed by the NRC and the BWROG as presented in NUREG-1433.

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 proposed amendment will not be inimical to the common defense and security or the health and safety of the public.

5.0 NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

10 CFR 50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis, using the standards in Section 50.92, about the issue of no significant hazards consideration. Therefore, in accordance with 10 CFR 50.92, the following analysis has been performed:

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

SGTS responds to a release of radioactivity to the secondary containment by establishing and maintaining a negative pressure in secondary containment and by providing a filtered elevated release. That is, the SGTS responds to an accident. Therefore, the proposed changes to the Technical Specifications cannot increase the probability of an accident previously evaluated.

Section 15.7.4 of the USAR evaluates a fuel bundle drop accident. The radiological consequences of this accident are provided in USAR Table 15.7-12 and are a small fraction of the guidelines of 10 CFR Part 100 and less than the GDC 19 limit. For a fuel bundle drop accident, the USAR analysis does not take credit for operation of the SGTS. With an SGTS subsystem running prior to the release of radioactivity to the secondary containment, the SGTS startup delay is eliminated, thereby decreasing the amount of radioactivity released to the environment. Therefore, the Technical Specification changes do not significantly increase the consequences of a previously evaluated accident.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

This amendment does not involve any accident precursors or initiators. During an accident involving the release of radioactivity to the secondary containment atmosphere, a SGTS subsystem would already be running and would filter the secondary containment atmosphere. With an operable SGTS subsystem in operation, its safety function is being performed.

Accordingly, the proposed Technical Specification changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The current Technical Specifications, LCO 3.6.5.3, provide a margin of safety by requiring both SGTS subsystems to be operable during activities involving the handling of irradiated fuel in the reactor building, core alterations and operations with

a potential for draining the reactor vessel. With one SGTS subsystem inoperable, the current Technical Specifications allow continuation of these activities for up to seven days, at which time these activities must be stopped. These Technical Specification requirements ensure that an SGTS subsystem will be available to provide a filtered release to the environment during an accident which could result in the release of radioactivity to the secondary containment atmosphere.

The first proposed change to the Technical Specification action statement a.2 of LCO 3.6.5.3 would allow continuation of handling of irradiated fuel in the reactor building, core alterations and operations with a potential for draining the reactor vessel beyond seven days with one SGTS subsystem inoperable provided the operable SGTS subsystem is in operation. A plant specific PRA was performed to evaluate the probability of a bundle drop event resulting in a need to start the SGTS with a concurrent failure of the SGTS that would result in an unfiltered ground level release under the current and proposed Technical Specification change. The results of this assessment indicate that the probability is not significantly increased. In addition, the order of magnitude of the probability of such a release, under the current or proposed Technical Specifications, is very small, i.e., 10^{-7}.

The probability of core alterations or operations with a potential for draining the reactor vessel resulting in a need to start the SGTS with a concurrent failure of SGTS that would result in an unfiltered ground level release is less than 10^{-7}. Accordingly, from a probablistic perspective, a fuel bundle drop accident is bounding.

By placing the remaining operable SGTS subsystem in operation, active single failures associated with its startup have been eliminated. These eliminated failures include automatic initiation instrumentation, relaying logic, breaker operation, fan operation, and valve operation. With an operable SGTS subsystem in operation, its safety function is being performed. In addition, the status of the operating SGTS subsystem is indicated in the control room. Therefore, the running, operable SGTS subsystem provides a level of safety equivalent to two non-running, operable SGTS subsystems.

Based upon the above analysis, the margin of safety is not significantly reduced by allowing activities involving the handling of irradiated fuel in the reactor building, core alterations or operations with a potential for draining the reactor vessel to continue beyond seven days with one SGTS subsystem inoperable since the operable SGTS subsystem is in operation.

In addition, the second proposed Technical Specification change would allow entry into the * defined operational condition for LCO 3.6.5.3 while relying on the provisions contained in the above proposed change to action statement a.2 of LCO 3.6.5.3. Entry into the * operational condition for LCO 3.6.5.3 with one SGTS subsystem inoperable and the other SGTS subsystem operable and in operation provides an equivalent level of safety to two operable non-running SGTS subsystems for activities involving the movement of irradiated fuel in the reactor building, core alterations and operations with a potential for draining the reactor vessel. Therefore, this change will not significantly reduce the margin of safety.

These changes are consistent with the improved Technical Specifications developed by the NRC and the BWROG as presented in NUREG-1433.

Accordingly, as determined by the analysis above, this proposed amendment involves no significant hazards consideration.