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Pursuant to 10 CFR 50.59(d)(2), attached is a summary report of evaluations performed at McGuire Nuclear Station for this reporting period. The evaluations demonstrate that Nuclear Station Modifications, Minor Modifications, procedures and other miscellaneous changes do not meet the criteria for a license amendment as defined by 10 CFR 50.59(c)(2).

Questions regarding this submittal should be directed to Kay Crane, McGuire Regulatory Compliance at (704) 875-4306.

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Attachment

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Nuclear Station Modifications Completed Under 10CFR50.59

MG-12529/00

MG-12529/00 Rev 1.

This modification removed the Atmospheric Dump Valves (ADV's). A turbine trip was added in the DEH system for full load rejection greater than fifty (50) percent. The mechanical portion of this modification consisted of removing a section of pipe from the main steam equalization header to the ADV's. A pipe cap was placed on the main steam header and on the abandoned line. The piping, ADV's, and associated equipment outside the turbine building was removed. Instrument air to the valves and to the ADV instrument panel was also abandoned in place inside the turbine building (capped.)

The electrical portion of this modification consisted of abandoned limit switches and interconnecting terminations, abandoned lamps on 1MC2, abandoned power to all four solenoid valves and interconnecting terminations. The ADV isolation valves were also removed, which consists of sparing the breaker, disconnecting cables at the breaker, deleting pushbuttons and lamps on 1MC2, and abandoning limit switches and interconnecting terminations. The Steam Dump System (IDE) was also modified to reflect the deletion of the ADV's. The Operator Aid Computer (OA) was updated to reflect the abandonment of the atmospheric dump system.

The modification will not affect other equipment/systems associated with the turbine bypass system. The modification will have no affect on the main steam system valves, steam dump to the condenser, or the steam generator power operator relief valves. As such, the modified turbine bypass system may permit a generator load rejection event of less than 50% of full steam load without a turbine trip, reactor trip, or lifting of the main steam safety valves. The turbine bypass system as modified will still have the ability to shutdown the unit as part of normal operation without having to rely on safety systems. Sufficient steam will continue to be bypassed to the condensers to permit a manually controlled cooldown of the unit as previously accomplished.

This modification will not initiate any transients or accidents. The ADV's only perform a mitigating function for certain situations that are not utilized in the operation of the plant. The ADV's are not safety related, nor required to mitigate the consequences of a UFSAR Chapter 15 accident. During normal operation, these valves are in service, but are closed. In this capacity, they provide a passive function in maintaining the integrity of the main steam system during normal operation. The pipe caps to be installed per this modification continue this function.

This modification also adds an additional turbine trip. Turbine trip is an event described in the UFSAR (Section 15.2.3.2). Although this modification installs an additional turbine trip, this does not result in more than minimal increase in the likelihood of this event occurring. The existing plant configuration does not allow for the possibility of certain transients to occur resulting in a runback to a new power level without a turbine trip and/or reactor trip. For McGuire, the limited number of transients that have occurred in which a successful runback was possible, a trip has always occurred. As such, given the limited number of transients that will occur over the operating life for McGuire and the limited success that the current turbine bypass

system has in avoiding a trip, the accident frequency change would be so small that there is no discernable trend toward increasing the frequency.

MG-12472/00

MG-22472/00

The Fuel Handling (FC) system consists of the equipment needed for the refueling operation. Basically, this equipment is comprised of cranes, handling equipment and a fuel transfer system. A fuel transfer tube connects the refueling canal and the spent fuel pool. This tube is fitted with a blind flange on the canal end and a gate valve on the spent fuel pool end. The blind flange is in place except during refueling to ensure containment integrity. Fuel is carried through the tube on an underwater transfer car. The upender at either end of the fuel transfer tube is used to pivot a fuel assembly. Before entering the transfer tube the upender pivots a fuel assembly to the horizontal position for passage through the transfer tube. After the transfer car transports the fuel assembly through the transfer tube, the upender at that end of the tube pivots the assembly to a vertical position so that it can be lifted out of the fuel container.

The Fuel Transfer System (FTS) is used to transport fuel assemblies between the refueling canal and the spent fuel pool (Transfer Canal), through the containment. FTS components include the conveyer cart, fuel assembly container, and the upenders (lifting frames). The FTS includes an above-water electric-motor driven transfer cart that runs on tracks extending from the refueling canal through the transfer tube and into the spent fuel pool and an upender lifting frame at each end of the transfer tube. The upender in the refueling canal receives a fuel assembly in the vertical position from the reactor manipulator crane. The fuel assembly is then lowered to a horizontal position for passage through the transfer tube and raised to a vertical position after passage through the transfer tube by the upender in the spent fuel pool. The fuel pool manipulator crane takes the fuel assembly to a position in the spent fuel storage racks.

This modification upgraded the existing fuel transfer cart conveyor drive control system with a new control system that will allow McGuire to vary the cart speed up to a maximum speed of about 40 feet/minute. This modification also replaced the hydraulic load cells and mechanical geared limit switches on the upenders with new electronic components that will perform the equivalent function.

This modification involves a system (the fuel transfer drive components and controls) that is normally not in operation and does not interface with any other mechanical systems. This system is used for the movement of fuel between the reactor vessel (in containment) and the fuel pool in the Fuel Building. The FTS is not an accident mitigation system or designated as QA-1 system.

Minor Modifications Completed Under 10CFR 50.59

MGTM-0257

This temporary modification installed tygon tubing to the normally open port of ORVS8320 (Fire Protection System) to allow connection to a temporary air source if the need arises to open 1RF832 while the power supply to the solenoid valve is unavailable.

The restrictive change to Procedure OP/1/A/6400/002A, Revision 114 provides the necessary instruction to open 1RF832 while the power supply for ORFSV8320 is unavailable by connecting to a temporary air source. This restrictive change will ensure that while the valve is open a dedicated operator is stationed at the local controls for 1RF832 and is in continuous communication with the control room. The restrictive change also provides the necessary instructions to close 1RF832.

When the tygon tubing is connected to ORFSV8320, containment isolation valve 1RF832 will be declared inoperable due to uncertainty associated with the impact the modification might have on the stroke time for the valve. As such, 1RF832 will be maintained closed and de-activated as required by condition A for Technical Specification 3.6.3, Containment Isolation Valves. This ensures that this valve will continue to provide a passive barrier for this containment penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation or leakage that exceeds limits assumed in the safety analysis.

The only time the 1RF832 may need to be opened is to charge the sprinkler header system needed to fight a fire in the Unit 2 containment building. The steps of open 1RF832 are provided by the restrictive change to OP/1/A/6400/002A, Revision 114. The opening of 1RF832 is in accordance with the provisions provided by Note 1 to Technical Specification 3.6.3. Accordingly, this ensures that the penetration can be rapidly isolated when a need for containment isolation is indicated.

Procedure Changes Completed Under 10CFR 50.59

OP/1/A/6100/003

OP/2/A/6100/003

This activity involved changes (Revision Numbers 101 and 84 for Units 1 and 2) to the procedure for controlling unit operation. This change provides the necessary steps for achieving shutdown (Mode 3) using a planned manual reactor trip. In particular, steps were added to Enclosure 4.2, Power Reduction, and a new enclosure (Enclosure 4.10, Shutdown via Reactor Trip) to accommodate this shutdown method.

This procedure change incorporates a reactor trip at low power as a part of the unit shutdown evolution. All plant systems are operated within their normal design operating parameters during this evolution. In other words, the conditions of the unit are such that a protective action, such as a reactor trip, is not required. Although the procedure specifies an option to manually trip the reactor, this action is not needed to protect the unit in order to mitigate any adverse condition. This reactor trip is not considered to be an accident nor an action that is needed to mitigate the consequences of an accident or transient. As described in the UFSAR (Table 5-2), the Reactor Coolant (NC) system has been analyzed to accommodate four hundred reactor trips. This operating transient cycle (reactor trip) is monitored to ensure that the design limit is not exceeded. The routine tripping of the reactor as part of the limit shutdown evolution remains within design limits and, thus will not adversely affect any plant systems or components. The reactor trip system components will not be impacted by the increase in the number of reactor trips that would result due to this procedure change. Current programs that monitor the reactor trip switchgear ensure a high degree of reliability and performance of the components of the reactor trip system. This procedure change does not revise how these components function or how they are operated. As such, the frequency or the consequences of previously evaluated accidents will not be increased. This procedure does not introduce any new failure modes. The procedure change does not affect any fission product barriers or associated parameters.

OP/1/A/6100/003

OP/2/A/6100/003

This activity involved changes (Revision Numbers 102 and 88 for Units 1 and 2) to the procedure for controlling unit operation. This evaluation addressed changes to the procedure that are associated with the Tave coastdown evolution. The purpose of this procedure is to describe the operation of the unit between 0 and 100% Rated Thermal Power (RTP). These changes allow for an alternate method of operation near the end of the operating cycle that will result in a Tave coastdown instead of a power coastdown. Enclosure 4.5, has been revised to provide the necessary steps, instructions and operator guidance for performing a Tave coastdown near the end of the fuel cycle. The Tave coastdown is described in three phases.

The following are the actions performed and the expected response of the unit during Phase I:

- Dilutions are secured

- The fourth turbine control valve opens to approximately 45%
- Tave is expected to decrease approximately 0.7°F/day
- Tref is periodically adjusted by IAE
- Reactor power is expected to remain relatively constant for 8 to 10 days.
- The end of Phase I has the reactor and turbine near 100% power at a colder Tave.

During Phase II:

- The fourth turbine control valve is maintained constant at about 45%
- Tave is expected to decrease about 0.4°F/day
- Reactor power is expected to decrease about 0.5%/day
- Tref is periodically adjusted by IAE

Phase III involves:

- Tave is maintained within 0.5°F of Trev by reducing turbine power
- Further adjustments of Tref are not be required as this occurs as turbine power is reduced.
- Phase II is considered consistent with current progression to shutdown except for the “off-program” conditions necessitated by the prior Tave reduction.
- This will take the unit to a power level not to be less than 70% power.

Since Tave will be dropping during the coastdown, Tref will be changed periodically to eliminate the auto rod movement which normally occurs when the Tave-Tref difference reaches its setpoint (1.5 degrees F). Guidance is provided within the procedure on when to adjust Tref. Additionally, the unwanted, nuisance alarm will also be prevented prior to reaching its setpoint (3 degrees F).

This evaluation is for changes which allow for operation of McGuire in a manner not previously experienced. In the past, end of cycle operation has included a “Power Coastdown” which involves reducing power along the normal operating space defined by UFSAR Figure 5-19. The difference in this “Tave Coastdown” method is the unit will actually be operated at colder, “off-program”, temperatures than previously defined by the relationship on UFSAR Figure 5-19. During this evolution, the reduction of Tave will not exceed 15 °F. As such, the anticipated lower limit Tave that may be reached is 570 °F. This is above the Tave limit specified in Technical Specification 3.1.1.4 (551 °F).

The implications of reduced temperature operation have been considered. Appropriate technical evaluations have been performed to assure that all Structures, Systems and Components (SSCs) which may experience different conditions than those to which they have been routinely subjected, can perform their intended design functions within the safety envelope to which the plant was originally licensed. In addition, transient and accident calculations were reviewed and, if required, reanalyzed to determine the effect of the end-of-cycle Tave coastdown would have. These other evaluations referenced herein, provide a basis upon which all-pertinent issues have been evaluated and limits placed procedurally, where necessary, to assure the operation of McGuire remains within its licensing basis.

The Tave parameter establishes initial conditions that are utilized in accident/transient analyses. A reduction in Tave temperature is not considered to be an initiator of any previously evaluated accidents/transients nor cause a failure of any plant SSC. This evolution will not have an adverse impact on the results of previously evaluated accidents/transients. Those events that could be adversely impacted by a reduction in Tave were evaluated or reanalyzed, and the results indicate that the acceptance criteria continue to be met, including the dose consequences for these events. No new failure modes or any new malfunctions of equipment have been identified. No accidents previously considered incredible are made credible as a result of this evolution. The reduction in Tave will not have any impact to the design basis limits associated with any of the fission product barriers.

AP/0/A/5500/045

AP/0/A/5500/045, "Plant Fire" is a new abnormal procedure. This is a new procedure that provides guidance to mitigate the effects of a fire that has the potential of causing loss of control of safe shutdown systems during Modes 1 through 3.

This procedure will be entered when there is an active fire in one of the specified Appendix R fire areas. This procedure provides guidance to mitigate the effects of a fire that has the potential of causing loss of control of safe shutdown systems during Modes 1 through 3. This procedure is not concerned with fires in the service or turbine building, or while the unit is in Mode 4,5, 6, or no-mode. In general, the actions of each enclosure are intended to maintain the functionality of the designated safe shutdown train. The actions taken per this procedure are precautionary in nature in order to preserve the functionality of the safe shutdown train. The resultant configuration will not place the unit outside the plants licensing basis, not will be inconsistent with analyses or descriptions in the UFSAR. The Technical Specifications for McGuire Nuclear Station do not need to be revised.

Miscellaneous Changes Completed Under 10CFR 50.59

Selected Licensee Commitment 16.9.5

Selected Licensee Commitment (SLC) 16.9.5, Fire Rated Assemblies, was revised to provide improved fire damper inspection methods and instructions. The requirement is to inspect all fire dampers every 18 months. The current industry standard is to conduct inspection of 105 of the dampers every 18 months. Since past inspection of 100% of the population has not demonstrated a trend of degrading operability, reducing the inspection sample size will not reduce the margin of safety.

Fire dampers may fail in their normal (open) state and fail to actuate upon demand. This may occur due to a broken spring or an obstructed track. They may also spuriously fail closed due to failure of the fusible link assembly. Damper closure due to link failure would put the damper in the proper state to fulfill the fire resistive function but would disrupt normal function of the ventilation system. If a damper fails shut, it would disrupt air flow. Area temperature alarms would alert operators to identify and restore a damper that spuriously closed. Fire dampers are passive in the normal state (open) and in their post fire, in-service state (closed). They are designed to change states (from open to closed) to mitigate the consequences of fire events. There is no reasonable way to postulate fire dampers acting to initiate an accident through their direct action or through interaction with other structures, systems or components. Changes in inspection frequency will have no affect on the way in which the dampers may act to initiate an accident. A reduction in the number of inspections in a given time period will result in less physical activity in the plant by inspection staff which also could not result in any increase in the frequency of occurrence of an accident previously evaluated in the SAR. Therefore, the change in inspection population will not increase the frequency of occurrence of an accident previously evaluated in the UFSAR.

Selected Licensee Commitment 16.2.8

The SLC was revised to allow a change in the delay period for declaring the commitment not met when a Testing Requirement is discovered to not have been performed. This revision changes the delay period from “up to 24 hours or up to the limit of the specified Frequency, whichever is less” to “up to 24 hours or up to the limit of the specified Frequency, whichever is more.” In addition, a statement was added to direct that “a risk evaluation shall be performed for any Testing Requirement delayed greater than 24 hours, and the risk impact shall be managed.”

This SLC was evaluated regarding extending the testing frequency upon discovery of a missed testing requirement. This revision is consistent with the NRC issued safety evaluation for (License Amendment 205/186) McGuire Technical Specification SR 3.0.3 regarding missed surveillance requirements per TSTF-358, Revision 5. This evaluation determined the SLC revision to be acceptable without obtaining a license amendment. This evaluation included a review of the testing requirements in the McGuire SLCs and relief on the following factors: (1) reduction in confidence that a standby system might fail to perform its safety function due to a

missed test is limited to a minimal increase, (2) the addition of a requirement to assess and manage the risk introduced by the missed test will further minimize the likelihoods of a malfunction, (3) the number of missed tests is a very small fraction of the total number of such tests, (4) the change applies only to unintentionally missed tests and is not to be used as an operational convenience to extend test frequencies, and (5) the SSC being tested is still required to be operable and capable of performing the accident mitigation functions assumed in the accident analysis.

Application of BWU-N CHF Correlation Below the First Mixing Vane Grid for Mk-BW Fuel Design for Steady-State DNB Analyses

This evaluation is for the application of the NRC approved BWU-N CHF correlation below the first mixing vane grid for the Mk-BW fuel design. The BWU-N correction will be applied in MAP development for RPS, Nominal, and Operational statepoint conditions and the associated steady-state DNB analyses.

This activity does not affect the licensing bases for the transient analyses described in Chapter 15 of the McGuire UFSAR. This activity only applies to the licensing basis governing analyses performed in Chapter 4 of the UFSAR.

The use of the NRC approved BWU-N CHF correlation below the first mixing vane grid for the Mk-BW fuel design produces more conservative and technically more appropriate MAP limits, which ensure DNB does not occur. Therefore, this activity does not result in a design basis limit for a fission product barrier being altered or exceeded.

The application of the NRC approved BWU-N correlation below the first mixing vane grid does not result in a departure from a method of evaluation described in the McGuire UFSAR due to the following:

- 1) The application of the BWU-N CHF correlation below the first mixing vane grid produces more conservative and technically more appropriate MAP limits, which ensure DNB does not occur.
- 2) The application of the NRC approved BWU-N correlation is consistent with its intended application per BAW-10199P-A, Add.1. Specifically, it is used to determine MAP limits at local conditions without mixing vane grids.
- 3) This activity does not affect the licensing bases for the transient analyses described in Chapter 15 of the UFSAR. This activity only applies to the licensing basis governing analyses performed in Chapter 4 of the UFSAR.

Application of BWU-N CHF Correlation Below the First Mixing Vane Grid for RFA Fuel Design for Steady-State DNB Analyses

This evaluation is for the application of the NRC approved BWU-N CHF correlation below the first mixing grid for the RFA fuel design. The BWU-N correlation will be applied in MAP

development for RPS, Nominal, and Operational statepoint conditions and the associated steady-state DNB analyses.

This activity does not affect the licensing bases for the transient analyses described in Chapter 15 for the McGuire UFSAR. This activity only applies to the licensing basis governing analyses described in Chapter 4 of the McGuire UFSAR.

The application of the NRC approved BWU-N correlation below the first mixing vane grid for the RFA fuel design produces more conservative and technically more appropriate MAP limits which ensure DNB does not occur. Therefore, this activity does not result in a design basis limit for a fission product barrier being altered or exceeded.

The application of the NRC approved BWU-N correlation below the first mixing vane grid for the RFA fuel design does not result in a departure from a method of evaluation described in the UFSAR due to the following:

- 1) The application of the BWU-N CHF correlation below the first mixing vane grid produces more conservative and technically more appropriate MAP limits, which ensure DNB does not occur.
- 2) The application of the NRC approved BWU-N correlation is consistent with its intended application per BAW-10199P-A, Add.1. Specifically, it is used to determine MAP limits at local conditions without mixing vane grids.
- 3) This activity does not affect the licensing bases for the transient analyses described in Chapter 15 of the UFSAR. This activity only applies to the licensing basis governing analyses performed in Chapter 4 of the UFSAR.