ATTACHMENT 1

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

PROPOSED TECHNICAL SPECIFICATION REVISIONS

9312010120 931111
PDR ADOCK 05000369
P PDR

2) A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

e. At least once per 18 months, during shutdown, by:

1) Verifying that each automatic valve in the flow path actuates to its correct position on Safety Injection actuation and automatic switchover to Containment Sump Recirculation test signals, and

2) Verifying that each of the following pumps start automatically upon receipt of a Safety Injection actuation test signal:

a) Centrifugal charging pump,

b) Safety Injection pump, and

c) RHR pump.

f. By verifying that each of the following pumps develops the indicated differential pressure when tested pursuant to Specification 4.0.5:

1)	Centrifugal charging pump	$\geq$ ~~2339~~ 2347 psid,
2)	Safety Injection pump	$\geq$ ~~1454~~ 1418 psid, and
3)	RHR pump	$\geq$ ~~169~~ 166 psid.

g. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:

1) Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS subsystems are required to be OPERABLE, and

2) At least once per 18 months.

Boron Injection Throttle Valves	Safety Injection Throttle Valves
Valve Number	Valve Number
NI-480	NI-488
NI-481	NI-489
NI-482	NI-490
NI-483	NI-491

h. By performing a flow balance test, during shutdown, following completion of modifications to the ECCS subsystems that alter the subsystem flow characteristics and verifying that:

1) For centrifugal charging pump lines, with a single pump running:

325 gpm for Unit 1 and 320 gpm for Unit 2

a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to ~~335 gpm~~, and

b) The total pump flow rate is less than or equal to ~~566~~ 560 gpm.

2) For Safety Injection pump lines, with a single pump running:

a) The sum of the injection line flow rates, excluding the highest flow rate, is greater than or equal to ~~405~~ 423 gpm, and

b) The total pump flow rate is less than or equal to ~~660~~ 675 gpm.

3) For RHR pump lines, with a single pump running, the sum of the injection line flow rates is greater than or equal to ~~3975~~ 4025 gpm.

ATTACHMENT 2

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

TECHNICAL JUSTIFICATION

Technical Justifications

Proposed Revision to ECCS Subsystems Surveillance Requirements

It is proposed that the following ECCS subsystem surveillance requirements be revised:

- The centrifugal charging pump minimum developed head requirement given in surveillance 4.5.2.f.1 from 2339 psid to 2347 psid.

- The safety injection pump minimum developed head requirement given in surveillance 4.5.2.f.2 from 1454 psid to 1418 psid.

- The residual heat removal pump minimum developed head requirement given in surveillance 4.5.2.f.3 from 169 psid to 166 psid.

- For the centrifugal charging pumps, the sum of the injection line flowrates, excluding the highest flowrate, given in surveillance 4.5.2.h.1.a from 335 gpm to 325 gpm for Unit 1 and 320 gpm for Unit 2.

- The centrifugal charging pump runout limit given in surveillance 4.5.2.h.1.b from 565 gpm to 560 gpm.

- For the safety injection pumps, the sum of the injection line flowrates, excluding the highest flowrate, given in surveillance 4.5.2.h.2.a from 405 gpm to 423 gpm.

- The safety injection pump runout limit given in surveillance 4.5.2.h.2.b from 660 gpm to 675 gpm.

- For the residual heat removal pump lines, with a single pump running, the sum of the injection line flowrates (all lines) given in surveillance 4.5.2.h.3 from greater than or equal to 3975 gpm to greater than or equal to 4025 gpm.

The above proposed changes apply to McGuire Units 1 and 2:

Technical Justification

Westinghouse and Dresser/Pacific Pumps notified Duke Power Company of changes in the generic runout limits for the centrifugal charging and safety injection pumps utilized at McGuire and Catawba Nuclear Stations. These changes decreased the centrifugal charging pump (CCP) runout limit from 565 gpm to 560 gpm, and increased the safety injection pump (SIP) runout limit from 660 gpm to 675 gpm. Historically, the centrifugal charging and safety injection systems have been configured (via flow balance) to; 1) preclude pump runout based on an injection mode alignment (suction source is the refueling water storage tank); and 2) provide minimum injected flows assumed in the LOCA analysis. During the recirculation phase of a LOCA, credit was taken for the increased suction boost supplied to the CCPs and SIPs by the residual heat removal (RHR) pumps. The increased suction boost was initially assumed to extend the runout limits of the CCPs and SIPs to beyond 565 and 660 gpm, respectively. The information provided by Westinghouse and Dresser/Pacific Pumps indicated that credit could not be taken for an increased pump runout limit due to excess suction pressure, since cavitation is expected to occur in the second stage of the pumps for flowrates above the proposed runout limits.

In response to this concern, Duke Power evaluated the McGuire and Catawba centrifugal charging and safety injection systems for runout conditions during the recirculation phases of a LOCA. For the short term, where runout was predicted to occur, credit was taken for plant data that supported runout flowrates in excess of the proposed generic runout limits and procedures for defining reactor coolant pump seal flow were revised. For the long term solution, it was determined that the centrifugal charging and safety injection flow balance requirements would need to be revised such that runout during the injection and recirculation phases of a LOCA would be prevented.

To implement the long term solution, the Technical Specification (TS) Surveillance Requirements (SR) for the ECCS subsystems will have to be revised. Specifically, it will be necessary to revise SR 4.5.2f and SR 4.5.2h, which establish the injected flow requirements for the ECCS subsystems. The specific revisions provided by this submittal will ensure that pump runout will not occur for the centrifugal charging pumps (CCPs) and the safety injection pumps (SIPs) during the injection and recirculation phases of a LOCA.

The proposed changes to the minimum developed head requirements (4.5.2.f) are indicative of the weakest pump head curves that were employed in generating the minimum LOCA injected flow assumptions. The proposed changes in the minimum injection line flow requirements (4.5.2.h) are indicative of the revised flow balance requirements for the CCPs and SIPs and the minimum assumed residual heat removal (RHR) system performance. The difference in the CCPs injection flow requirements for Unit 1 and Unit 2 are necessary because of slightly weaker Unit 1 CCPs. The Unit 1 CCP flow balance requirements are slightly greater to ensure the LOCA CCP injection flow assumptions are satisfied.

The proposed TS changes are outside the current assumptions for ECCS performance during a LOCA. As such, a LOCA reanalysis was performed to demonstrate the acceptability of the proposed TS changes. The LOCA reanalysis was performed in accordance with the NRC approved LOCA methodology for McGuire Nuclear Station.

Based on the reanalysis that was performed, a LBLOCA design basis event, with ECCS injection flowrates that are indicative of the proposed changes to the TS surveillance requirements, resulted in a peak clad temperature (PCT) of 1945 °F, which is below the 10CFR50.46(b)(1) acceptance criteria of 2200 °F. For the SBLOCA design basis event, the final PCT was 1264 °F, which meets the 10CFR50.46(b)(1) acceptance criteria. Therefore, the LOCA reanalysis that was performed demonstrates acceptable PCTs and thus the proposed changes to the ECCS subsystem surveillance requirements are also acceptable.

ATTACHMENT 3

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION

NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

As required by 10 CFR 50.91, this analysis is provided concerning whether the proposed TS amendments involves a no significant hazards consideration, as defined by 10 CFR 50.92. The standards for determining if a proposed amendment involves no significant hazard considerations are; if operation of the facility in accordance with the proposed amendment would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

The proposed changes to the TS provided by this amendment request concern certain surveillance requirements for the ECCS subsystems (3/4.5.2). The purpose of the ECCS subsystem surveillance requirements is to ensure that at a minimum, the assumptions used in the safety analysis are met and that the ECCS subsystem operability is maintained. Briefly, The proposed TS changes provided by this amendment request are:

1) Revise the minimum developed head requirement for the centrifugal charging pumps (CCPs), the safety injection pumps (SIPs) and the residual heat removal pumps (RHRPs).

2) Revise the sum of the minimum injection flowrates for the CCPs, SIPs and the RHRPs.

3) Revise the total maximum pump flowrate (runout limit) for the CCPs and the SIPs

The following discussion is a summary of the evaluation of the proposed amendments against the 10 CFR 50.92(c) requirements to demonstrate that all three standards are satisfied.

First Standard

(Amendment would not) involve a significant increase in the probability or consequences of an accident previously evaluated.

The TS changes proposed by this amendment request are not considered to be initiators of any Design Basis Accidents (DBA). During normal operation the SIPs and the RHRPs are in standby, they are not operating. In the event of an accident resulting in an Engineered Safeguard (ES) actuation, the pumps would start to provide flow to the reactor vessel. The minor changes proposed for these pumps (SIPs and RHRPs) would not cause any accidents or events that have been previously evaluated.

During normal operation, a CCP is operating. The proposed minor changes provided by this submittal only impact the performance of these pumps in response to an ES actuation. The proposed changes do not affect, in any way, how these pumps are operated during normal operation. As such, the minor changes proposed for the CCPs would not cause any accidents or events that have been previously evaluated. Accordingly, the proposed TS changes would not increase the probability of an accident that has been previously evaluated.

The purpose of the ECCS subsystem is to ensure sufficient flow is provided to the core in the event of a LOCA, that is to mitigate the consequences of a LOCA. A LOCA analysis was performed to determine the impact of the proposed TS changes. The analysis was performed in accordance with the NRC approved LOCA methodology for McGuire Nuclear Station. The results of the analysis demonstrate that the acceptance criteria of 10 CFR 50.46 are still satisfied. Further, the purpose of the proposed TS changes are to prevent runout of the ECCS subsystem pumps during the injection and recirculation phases of a LOCA. Accordingly, the proposed TS changes would not increase the consequences of an accident that has been previously evaluated.

Second Standard

(Amendment would not) create the possibility of a new or different kind of accident from any kind of accident previously evaluated.

The proposed TS changes would not require any modifications to any structures, systems or components at McGuire Nuclear Station. Some minor changes to certain testing procedures for the ECCS subsystem pumps would be necessary. These minor changes would only involve specific values identified within the procedure and would not result in any changes on how the test would be performed. No other changes to procedures on how the station is operated or maintained would occur. Accordingly, the proposed TS change would not create a new or different kind of accident than what has been previously evaluated.

Third Standard

(amendment would not) involve a significant reduction in a margin of safety.

The results of the analysis that was performed to determine the impact of the proposed TS changes would have in mitigating a LOCA indicate that the acceptance criteria of 10 CFR 50.46 are still satisfied. The analysis that was performed demonstrate that the Peak Clad Temperature (PCT) would remain below 2200°F. The proposed changes ensure that the ECCS subsystem pumps will be operated within the limits specified by the manufacturer. Accordingly, the proposed TS changes would not significantly reduce any margins of safety.

Based on the above and the supporting technical justification, Duke has concluded that there is no significant hazard consideration involved in this request.