INL USQ PROCESS
REASONABILITY DETERMINATION/POTENTIAL INADEQUACY IN THE SAFETY ANALYSIS (PISA) FORM
(DO NOT USE FOR PROPOSED CHANGES)

Facility or Activity: ATRC

USQ Process No.: RTC-USQ-2007-613

Subject: Voltage Monitor Time Response

Describe the New Information/Discovery:

A systems assessment by DOE noted that the system design description [SDD-70.7.2], "Advanced Test Reactor Critical Facility (ATRC) Reactor Shutdown System" [Table 1.5] listed a response time as a performance requirement for the voltage monitor subsystem. The facility safety basis requires that the instrument be operable for reactor operation. TSR surveillance [4.192.2.1.7(4)] ensures instrument operability and is implemented by MP-11.25, "ATRC Voltage Monitor Subsystem Checks". MP-11.25 does not verify a response time.

Identify the applicable safety basis document(s) (e. g., DSA, SAR, BIO, TSRs, etc.):

SAR-192, "Safety Analysis Report for the Advanced Test Reactor Critical Facility"
TSR-192, "Technical Safety Requirements for the Advanced Test Reactor Critical Facility"

I. REASONABILITY DETERMINATION (Reasonability determinations made as part of the ATR Design Basis Reconstitution effort may be documented per SP-10.2.4.9)

Is it reasonable that the potential for an inadequate safety analysis exists based on the new information or discovery described above? ☐ Yes ☒ No

If "Yes," proceed to Sections II, III, and IV.
If "No," provide an explanation and basis for the reasonability determination.

The voltage monitoring subsystem as a safety significant SSC monitors the voltage supplied to the RSS. Per the facility safety basis, the functional requirement of the subsystem is to provide a scram signal any time voltage supplied to the RSS is outside of a specific range hence the instrument must be operable for reactor operation. Operability is demonstrated successful completion of MP-11.25. The steps in the procedure require verification that the safety rods do indeed drop for both low and high out of range voltages. This demonstrates that the functional requirement is successfully met and the instrument is meeting its intended safety function. This also satisfies compliance with the surveillance requirement and the LCO for operability. There are no specific instrument parameters delineated in the LCO [3.192.2.1] since the voltage monitor is not analyzed as a part in any of the facility accident scenarios. Thus time response of this instrument is not a parameter that is relied on as a safety function by the safety basis. The function of the instrument is to limit the time that the RSS is supplied power outside the design parameters and helps insure the reliability of the system. The trip of the voltage monitor initiates a slow scram [RE-P-83-003] or a mechanical scram by the cut out of the magnet current to the safety rods. This scram versus the fast scram [electronic reduction of magnet current] is not subject to the maximum safety rod release and drop time limits rendering the time response requirement of the voltage monitor needless in terms of its safety function. The safety analysis assumes only that a scram will occur thus the lack of specifying a time response for this instrument in the safety basis is not a potential for an inadequate safety analysis.

C. Satterwhite USQ Evaluator Print/Type Name	CSatterwhite USQ Evaluator Signature	August 28, 2007 Date
E. Schuebert or B. Clements Nuclear Facility Manager Print/Type Name	[signature] Nuclear Facility Manager Signature	8/28/07 Date

If the answer to the question above is "No," file the completed form. Do not complete Section II, III, or IV.

If the answer to the question above is "Yes," complete Section II, III, and IV.

II. PISA DECLARATION

What is the basis for concern that the safety basis may not be bounding or may be otherwise inadequate? Provide an explanation.