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

Facility or Activity: Advanced Test Reactor

USQ Process No.: ATR Complex-USQ-2009-337

Subject: Dry Transfer Cubicle Reference Not Completed Before Submission of SAR-153 Addendum to D.O.E.

Describe the New Information/Discovery:

ECAR-497, "ATR DTC Shielding Materials Evaluations and Exposure Rate Assessments," has not been completed and issued. This ECAR is a reference in the SAR-153 Addendum for the ATR Dry Transfer Cubicle (SAR-153-ADD-2), which was approved by the Department of Energy (IS-ATR-09-014).

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

SAR-153-ADD-2, "SAR-153 Addendum for Use of the Advanced Test Reactor Dry Transfer Cubicle"

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 PISA affects only the Dry Transfer Cubicle (DTC) safety basis. At the time of discovery, the DTC was not approved for use and was in a safe condition – the shielding function is not needed. No actions to place the DTC in a safe condition are necessary.

Before the DTC can receive irradiated materials, the DTC must be approved for use following a management safety and readiness assessment. In addition, since the time of discovery, ECAR-497 has been completed and issued. ECAR-497 confirms the safety analysis assumptions.

S. D. Winter / J. C. Chapman USQ Evaluator Print/Type Name	JC Chapman USQ Evaluator Signature	6 May 2009 Date
E. J. Schuebert Nuclear Facility Manager Print/Type Name	E J Schuebert Nuclear Facility Manager Signature	5/6/09 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.

The Dry Transfer Cubicle at the ATR provides a shielded environment for handing irradiated materials in air. The shield envelope of the DTC is composed of the walls, ceiling, floor, shield windows, shield door, penetration shielding. ECAR-497, a reference in SAR-153-ADD-2, was intended to demonstrate that the shielding material installed in certain DTC wall penetrations was acceptable for DTC usage. Without ECAR-497, there is no documented basis for DTC penetration shielding acceptability. This lack of basis undermines the shield envelope adequacy argument in SAR-153-ADD-2.

A PISA exists. Complete the following actions

- Nuclear Facility Manager document actions (below) including interim operating restrictions taken to

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place or maintain the facility in a safe condition.

- Nuclear Facility Manager execute reporting process for PISA per LWP-9301 and LWP-13830.
- Qualified USQ evaluator proceed to Section **III**.

ACTIONS TAKEN TO PLACE OR MAINTAIN FACILITY IN A SAFE CONDITION AND THE BASIS FOR THE SELECTION OF ANY INTERIM CONTROLS.

Safety Analyst Print/Type Name	Safety Analyst Signature	Date
Nuclear Facility Manager Print/Type Name	Nuclear Facility Manager Signature	Date

Is independent technical review required? Yes ☐ No ☒

Nuclear Facility Manager Signature or Initials

Independent Reviewer Print/Type Name	Independent Reviewer Signature	Date

III. USQ DETERMINATION

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

IIIa: POTENTIAL FOR AN INCREASE IN PROBABILITY OR CONSEQUENCE OF AN ACCIDENT OR MALFUNCTION EVALUATED IN THE SAFETY BASIS

1. Could the PISA increase probability of occurrence of an accident previously evaluated in the safety basis?
   Yes ☐ No ☐
   Explain: