September 1, 2009

PHYSICAL SECURITY AUDIT PLAN

SEPTEMBER 8-9, 2009

US-APWR DESIGN CERTIFICATION
Mitsubishi Heavy Industries, Ltd
Docket No. 52-021
TAC No.: RF1006

Location: Mitsubishi Nuclear Energy Systems, Inc.
2300 Wilson Blvd, Suite 300, Arlington, VA

Purpose:

The purpose is to review, verify and identify information and documentation that will require docketing for establishing design certification or licensing basis for making regulatory findings. The audit will review and evaluate supporting documentation for Mitsubishi Heavy Industries (MHI) Technical Reports: US-APWR Design Certification Physical Security Element Review (UAP-SGI-08001 R1) and US-APWR High Assurance Assessment Evaluation Report (UAP-SGI-08002 R0), submitted on October 2, 2008.

Background:

Ongoing NRC staff review of applicant's information on the docket has identified information lacking complete and adequate descriptions related to the technical bases, assumptions, and design/performance requirements for the subject area of the audit. The completeness of information on how an applicant determines and meets regulatory performance and prescriptive requirements allows for the NRC staff to arrive at informed security findings for standard design and allows NRC staff to determine the appropriate regulatory decisions. The docket information on the subject of audit scope requires additional focus for NRC staff in preparation of RAIs and resolutions of open items.

Regulatory Audit Bases:

Subpart B of Title 10 CFR (10 CFR) 52, 52.47, requires that information submitted for a design certification must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC, and the procurement, construction and installation specifications by an applicant. Title 10 CFR 52.48 requires the application filed will be reviewed for compliance with the standards set out in 10 CFR Part 73. Title 10 CFR 73.55(a) requires an applicant to provide a "physical security system designed to protect against the design basis threat (DBT) of radiological sabotage."

Title 10 CFR 73.2 defines vital equipment. Title 10 CFR 73.55(b)(9)(i) requires that all vital equipment is located within a protected area so that access to vital equipment requires passage through at least two physical barriers. The identification of vital equipment must be complete and accurate to provide the licensing basis, and demonstrate that all vital equipment is protected as required by 10 CFR 73.55(b)(9)(i). The standard US-APWR design includes the design of physical protection systems (e.g., one of two barriers) that a COL applicant may credit and incorporate by reference to meet 10 CFR 73.55(b)(9)(i).

Title 10 CFR 73.55(b)(4) requires a COL applicant to analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of 10 CFR 73.55 and account for these conditions in the design of the physical protection program. The identification of target sets (i.e., which must be protected against the DBT), based on the standard US-APWR design of reactor systems within the scope of the DC, is determined and analyzed by MHI.

Regulatory Audit Scope:

The scope will include the review of supporting documentation for a systematic evaluation or analysis that establishes the technical basis for meeting performance and/or prescriptive requirements of 10 CFR 73 and the adequacy of information for the preparation of acceptance and inspection requirements for the following:

- The first part of the audit will review information and methodology applied to establish the technical basis for determining a complete and accurate list of vital equipment within the scope of the US-APWR design certification. The review will focus on how MHI identified all vital equipment, as defined in 10 CFR 73.2, and the identification of vital areas. The identification of a complete and accurate list of vital equipment provides the licensing basis and demonstrates that all vital equipment is protected as required, by 10 CFR 73.55(b)(9)(i). The review will focus not only on how MHI identified vital equipment, but also on how MHI eliminated structures, systems and components as not vital.

- The second part of the audit will review information and methodology applied to systematically determine target sets based on the safety-related systems and/or non-safety-related systems of the standard US-APWR design. The review will focus on tracing how MHI systematically arrived at the target sets (based on the standard US-APWR design) that must be protected from the list of vital equipment. The review will include how MHI included risk-informed insights to identify risk-significant, non-safety-related systems as element(s) of target sets.

Information and Other Material Necessary for the Regulatory Audit:

NRC staff requests MHI to provide an overview of methodology applied to systematically identify a complete and accurate list of vital equipment from the descriptions of reactor safety systems and components described in the US-APWR FSAR. The overview should include the technical basis for how and why equipment was either selected or eliminated. A similar overview will be needed on the methodology applied to systematically identify minimum target sets, based on the standard reactor design that must be protected against the DBT. Site specific, or administrative controls and systems and components that are outside the scope of the DC, are the responsibility of the COL applicant and need not be discussed.

Audit Team:

Pete Lee, NRC, Lead Technical Reviewer on Physical Security for US-APWR DC and R-COLA
Nick Saltos, NRC PRA Technical Reviewer on PTS for US-APWR DC
Bruce Mrowca, NRC Contractor (ISL), supporting technical reviewer of US-APWR DC
Chris Chwasz. NRC Contractor (ISL), supporting technical reviewer of US-APWR DC
Michael Takacs, NRC Chapter 13 Project Manager for US-APWR DC.

No quality assurance (DCIP) support is required for this audit. Any materials deemed to be suitable for submittal or citation will be identified for future quality assurance program audit activities.

Logistics:

The audit will be conducted at the Mitsubishi Nuclear Energy System office in Arlington Virginia. The audit is scheduled to begin at 10:00 a.m. on September 8, 2009, and end at 12:00 p.m. on September 9, 2009. Participating individuals will meet at the audit location

Special Requests:

Appropriate handling and protection of Safeguards Information (SGI) shall be acknowledged and implemented throughout the audit.

Deliverables:

An audit report will be generated after completion of the audit. The audit outcome will be used to identify information not currently addressed on the docket and for the submittal of additional information for making security findings and regulatory decisions. The audit will assist NRC staff in the preparation and issuance of RAIs for the licensing review of CPNPPU3 COL application.

References:

1. Design Certification Physical Security Element Review (UAP-SGI-08001 R1)
2. High Assurance Evaluation Assessment (UAP-SGI-08002 R0)

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