

August 27, 2013

**PRE-APPLICATION DESIGN CERTIFICATION SECTION 6.3
CONTAINMENT SUMP STRAINER BYPASS TEST AUDIT PLAN**

August 28-29, 2013

**APR1400
Korea Hydro & Nuclear Power Co., LTD
Project No. PROJ0782**

Location:

Continuum Dynamics, Inc. (CDI), 34 Lexington Avenue, Ewing, New Jersey 08618

Purpose:

The purpose of this audit is to observe strainer bypass testing, and to review, verify and identify information and documentation that is related to strainer bypass testing associated with long-term recirculation cooling capability. The audit will review and evaluate testing methods and implementation for the Korea Hydro & Nuclear Power Co., LTD (KHNP) Design Certification Section 6.3, Emergency Core Cooling Systems (ECCS), as well as related Technical Report APR1400-E-A-T(NR)-13003-P, Revision 1, "APR1400 IRWST ECCS Sump Strainer Bypass Test Plan."

Background:

The KHNP submitted to the U.S. Nuclear Regulatory Commission (NRC) staff APR1400-E-A-T(NR)-13003-P, Revision 1, "APR1400 IRWST ECCS Sump Strainer Bypass Test Plan" dated August 12, 2103. The purpose of this test plan is to measure fiber bypass data to determine what quantity of fiber can pass through the plant ECCS strainers.

Regulatory Audit Basis:

To satisfy the requirements of Generic Design Criteria 35 and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.46(b)(5) regarding the long-term cooling by the ECCS, adequate core cooling must be ensured. The strainer debris bypass fraction is a critical assumption for downstream in-vessel fuel assembly head loss tests in assessing long-term recirculation cooling capability. Therefore, adequate strainer design consideration of debris bypass is necessary

Regulatory Audit Scope:

The scope for the regulatory audit will be observing strainer bypass testing and focusing on the attributes listed below:

- Test plan (protocol) and test matrix;
- Test apparatus and measurement equipment;
- Test parameters (i.e.: flow, level, temperature, turbulence, and vortex);
- Instrumentation (pressure taps and transmitter location);
- Debris loading (each batch): preparation, addition/introduction, and stabilization;
- Debris accumulation;
- Filtering bags and housing; and
- Filter bags handling and processing (installation, removal, weighing, etc.).

Audit Team:

Diego Saenz – Lead Auditor
Boyce Travis – Team Member
Jeff Ciocco – Project Manager

Logistics:

The audit is planned for two days, August 28, 2013, and August 29, 2013, at CDI's test facility located in Ewing, New Jersey.

Special Request:

Appropriate handling and protection of proprietary information shall be acknowledged and observed throughout the audit.

Deliverables:

The NRC staff will conduct the audit from August 28 - 29, 2013. NRC may request an ad-hoc extension of the audit if findings during the ongoing audit reveal the need for additional time. Such an extension will be requested before the audit is adjourned on August 29, 2013, by the NRC staff responsible for the audit.

An audit report will be generated after completion of the audit. The audit outcome will be used to identify any additional information to be submitted for making regulatory decisions. The audit will assist the NRC staff in the preparation and issuance of further requests for additional information for the licensing review of the APR1400 Design Certification Application, Section 6.3.

References:

1. APR1400-E-A-T(NR)-13003-P, Revision 1, "APR1400 IRWST ECCS Sump Strainer Bypass Test Plan," dated August 12, 2013.

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References:

1. APR1400-E-A-T(NR)-13003-P, Revision 1, "APR1400 IRWST ECCS Sump Strainer Bypass Test Plan," dated August 12, 2013.

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