October 1, 2008

MEMORANDUM TO: Mark H. Salley, Chief
Fire Research Branch
Division of Risk Analysis
Office of Nuclear Regulatory Research

FROM: Gabriel J. Taylor, Fire Protection Engineer ***/RA/ M.Salley for***
Fire Research Branch
Division of Risk Analysis
Office of Nuclear Regulatory Research

SUBJECT: SUMMARY OF SEPTEMBER 23, 2008, PUBLIC MEETING REGARDING THE DIRECT CURRENT ELECTRICAL SHORTING IN RESPONSE TO EXPOSURE-FIRE (DESIREE-FIRE) PROJECT

On September 23, 2008, the U.S. Nuclear Regulatory Commission (NRC) held a Category 2 public meeting with interested stakeholders, including the Nuclear Energy Institute (NEI) staff, members from the nuclear industry, and the public. The meeting was held at The Legacy Hotel located at 1775 Rockville Pike, Rockville, MD 20852 and teleconferencing lines were made available for members of the public who could not be present at the meeting.

The purpose of the meeting was to present and receive comments back from industry and members of the public on the proposed plans for the upcoming fire-induced cable failure testing involving direct current (DC) circuits to be conducted at Sandia National Laboratories. The draft test plan, "Test Plan for Fire-Induced Failure Modes and Effects Testing of Direct Current Driven Control Circuit Cables," was distributed at the meeting and is available in the NRC Agencywide Document Access and Management System (ADAMS) Accession Number ML0826520518.

In addition to receiving comments from the meeting participants, the NRC has issued the draft test plan for public comment via a *Federal Register* notice (73 FR 53452) dated September 16, 2008. Information on providing comments on this document can be found at the Federal e-Rulemaking Portal http://www.regulations.gov and searching on the Docket ID : NRR-2008-0505. The comment period for this document expires on October 24, 2008. Any comment received after that date will be considered to the extent practicable.

During the meeting the NRC staff presented the draft test plans to conduce fire-induced failure modes and effects testing on direct current (DC) circuit cables, including the following topics:

- schedule and need for testing
- experimental approach
- proposed cable and component selection
- thermal and electrical monitoring, and
- the proposed DC circuits to be tested.

In addition to presenting these topics, the NRC invited external stakeholder to participate in the testing program through the Electric Power Research Institute (EPRI). Parties interested in partaking in this cooperative research agreement between EPRI and the NRC will be required to give the NRC and EPRI notice prior to the end of public comment period for the draft test plan, which is October 24, 2008. To facilitate such cooperative research, the current Fire Risk addendum to the NRC/EPRI Memorandum of Understanding (MOU) will be revised to identify the roles of each party for this DC circuit testing program.

During the meeting there were two public comment periods. Public comments were received during both periods and are summarized below;

- DC Power Supply – The use of automotive batteries may not adequately represent the Class 1E safety related DC battery banks found in nuclear power plants (NPPs). Specifically, the amount of fault current available in the automotive battery bank is approximately an order of magnitude below the current available for Class 1E battery banks found in a typical NPP.

- Cable Leads – to better represent the actual cable configurations found in the plant, it may be useful to include extended cable runs in the test circuit to better represent the electrical characteristics of actual NPP circuits.

- Monitoring DC Grounding – when analyzing the data from these tests it will be necessary to identify when the first conductor becomes grounded.

- Component Selection – although circuit design varies widely among NPPs, it will be important to select components that are representative of what is being used in the industry. In particular, selection of fuse size and type can have an effect on the circuit failure response and it will be important to select the appropriate fuse size for the DC control circuit that the fuse will be used in.

- Instrumentation Circuit Response – it was noted that instrumentation cable can be affected by temperature deviations from ambient operating temperature. The heat transferred to/from an instrumentation cable may cause thermally-induced currents which may result in an erroneous instrumentation reading. It was recommended that the test plan incorporate a method to monitor these effects.

These comments, along with others, will be reviewed and incorporated into the test plan as appropriate.

Action Item

- NRC & EPRI to amend the Fire Risk Addendum to MOU.

Slides and handouts presented on the above topics are available in ADAMS. The accession number for the NRC slides dated September 23, 2008, is ML082630912.

Enclosures:
As stated

Action Item

- NRC & EPRI to amend the Fire Risk Addendum to MOU.

Slides and handouts presented on the above topics are available in ADAMS. The accession number for the NRC slides dated September 23, 2008, is ML082630912.

Enclosures:
As stated

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MEETING WITH INTERESTED STAKEHOLDERS REGARDING

DIRECT CURRENT (DC) CIRCUIT SPURIOUS ACTUATION DRAFT TEST PLAN

LIST OF ATTENDEES

September 23, 2008

Name	**Organization**
Gabriel Taylor	NRC/RES/DRA/FRB
Mark Henry Salley	NRC/RES/DRA/FRB
Jason Dreisbach	NRC/RES/DRA/FRB
Harold Barrett	NRC/NRR/DRA/AFPB
Steven P. Nowlen	Sandia National Laboratories
Steven Hutchins	Nuclear Energy Institute
Jim Riley	Nuclear Energy Institute
Felix Gonzalez	NRC/RES/DRA/FRB
Dennis Henneke	GE – Hitachi
Bob White	ERIN Engineering
Aixa Belen-Ojeda	NRC/RES/DRA/FRB
Jessica Kratchman	NRC/RES/DRA/FRB
Thinh Dinh	NRC/NRO/SFPB
Dennis Andrukat	NRC/NRO/SFPB
Steve Graham*	Duke Energy
Ken Canavan*	Electric Power Research Institute
Jay Brown*	Sandia National Laboratories
Anne Robinson*	Tennessee Valley Authority
Ed Bradley*	Tennessee Valley Authority
Bob Kalantari*	Engineering Planning and Management (EPM) Inc.
Francisco Pellizzari*	Engineering Planning and Management (EPM) Inc.
Tom Gorman*	PPL
Dan Funk*	Edan Engineering
Ronald Hendrix*	Arkansas Nuclear One (Entergy)
Dennis Barton*	Arkansas Nuclear One (Entergy)
Larry Young*	Arkansas Nuclear One (Entergy)

* participated via phone