

September 6, 2011

MEMORANDUM TO: Michael C. Cheok, Director
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Steven A. Laur, Senior Technical Advisor **/RA/**
Division of Risk Assessment
Office of Nuclear Reactor Regulation

SUBJECT: SEPTEMBER 1, 2011 PUBLIC MEETING SUMMARY -
PROPOSED CHANGES TO CLARIFY THE DEFENSE-IN-DEPTH
PHILOSOPHY OF REGULATORY GUIDE 1.174, "AN
APPROACH FOR USING PROBABILISTIC RISK ASSESSMENT
IN RISK-INFORMED DECISIONS ON PLANT-SPECIFIC
CHANGES TO THE LICENSING BASIS"

A Category 2 public meeting was held on September 1, 2011, at the Nuclear Regulatory Commission (NRC) Church Street offices (21 Church Street, Rockville, MD, 20850) to discuss proposed changes to the defense-in-depth portion of Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." The enclosure lists the attendees. The meeting was announced on July 11, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML111920380).

The purpose of the meeting was to continue discussions with members of industry to ensure clarity and promote understanding of the proposed changes to clarify the defense-in-depth philosophy as set forth in regulatory position 2.1 of RG 1.174. This was a follow-on meeting to the public meeting held on June 8, 2011 (refer to ADAMS Accession No. ML111600279)

Steven Laur (NRC) stated that the meeting was to ensure clarity and promote understanding of the proposed changes, but pointed out that the NRC is not soliciting formal comments at this time. He noted that there will be a public comment period at the appropriate point in the regulatory guide development process. He also reminded participants of the purpose for the revision, which is in response to Staff Requirements Memorandum (SRM) SECY-11-0014, "Use of Containment Accident Pressure in Analyzing Emergency Core Cooling System and Containment Heat Removal System Pump Performance in Postulated Accidents." That SRM stated, in part:

"Because the statements in Regulatory Guide 1.174 are subject to different interpretations, the staff should revise this guide using precise language to assure that the defense-in-depth philosophy is interpreted and implemented consistently."

CONTACT: Steven A. Laur, NRR/DRA
(301) 415-2889

At the June 8, 2011 meeting, industry representatives indicated that they would be interested in providing some insights on defense-in-depth for the NRC staff's consideration at a follow-up meeting. Gareth Parry of Erin Engineering presented some preliminary defense-in-depth insights from industry, which provided a structure for discussion among the participants. The industry's presentation material was made available in advance of the public meeting to interested stakeholders on the NRC public website and is available in ADAMS (Accession No. ML112411300). The NRC handout was the same as that provided at the June 8, 2011 meeting, and is available in ADAMS (Accession No. ML112420721).

There was some discussion regarding the scope of the proposed changes to RG 1.174. At the June 8, 2011 meeting there appeared to be general agreement with the NRC staff's approach, which is to provide additional explanatory material and examples after each of the seven defense-in-depth attributes in the bulleted list in regulatory position 2.1.1 of RG 1.174, but not to attempt to redefine defense-in-depth or to develop new attributes. Several participants in the September 1, 2011 meeting continued to disagree with this, expressing the opinion that some level of re-definition could be useful.

A number of opinions were discussed at the meeting, for the most part relating to various ideas put forth during the industry presentation. The following captures some of the points made, in no particular order. No evaluation of the comments or judgment regarding them should be inferred from these minutes.

- The NRC Standard Review Plan (SRP), (NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition"), Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," includes information on defense-in-depth that is not included in RG 1.174. The NRC staff should consider whether any of those thoughts should be included in the proposed revision to the RG.
- There needs to be guidance on how to integrate the five key principles of risk-informed regulation (RG 1.174, Section C). Several participants mentioned that the Nuclear Energy Institute (NEI) had developed a guidance document (thought to be NEI 02-02) that had a process and flowchart for addressing defense-in-depth.
- When "barriers" are discussed, they could be the high levels of protection as well as the engineered safety features and programmatic aspects.
- Use of examples to clarify the defense-in-depth guidance is not sufficient – the guidance itself should clearly communicate the concept of interest without reliance on examples. (The participants expressed different opinions regarding whether examples should be included. Some opined that examples are useful, but need to include integration among the various defense-in-depth attributes and among the five key principles of risk-informed regulation. Others thought that examples could be misinterpreted and their use reconsidered.)
- On industry presentation slide #5, it was pointed out that "SRM 98-114" should be "98-144."

- Regarding the proposed structural hierarchy (industry presentation slide #6), one participant suggested an alternative to the “design” and “programmatic” taxonomy: design, construction, and operation.
- On industry presentation slide #8, there was some disagreement as to whether the IPE and IPEEE actually identified and addressed vulnerabilities. There was also some discussion as to whether a license amendment request could propose removal of one of the levels of protection.

There were no comments by members of the public at the appointed place in the agenda.

Biff Bradley (NEI) said that NEI was planning to develop a “white paper” to provide during the public comment period for the proposed revision to RG 1.174. The NRC staff noted that there is time available to accommodate future discussions before that time. The meeting participants agreed that another meeting on this subject would be beneficial. The tentative time for such a meeting should be early Fall, 2011. Steven Laur and Mary Drouin will set up the next public meeting in that time frame.

At this point, there being no further questions, comments or discussion, the meeting was adjourned.

Enclosure:
List of Attendees

- Regarding the proposed structural hierarchy (industry presentation slide #6), one participant suggested an alternative to the “design” and “programmatic” taxonomy: design, construction, and operation.
- On industry presentation slide #8, there was some disagreement as to whether the IPE and IPEEE actually identified and addressed vulnerabilities. There was also some discussion as to whether a license amendment request could propose removal of one of the levels of protection.

There were no comments by members of the public at the appointed place in the agenda.

Biff Bradley (NEI) said that NEI was planning to develop a “white paper” to provide during the public comment period for the proposed revision to RG 1.174. The NRC staff noted that there is time available to accommodate future discussions before that time. The meeting participants agreed that another meeting on this subject would be beneficial. The tentative time for such a meeting should be early Fall, 2011. Steven Laur and Mary Drouin will set up the next public meeting in that time frame.

At this point, there being no further questions, comments or discussion, the meeting was adjourned.

Enclosure:
List of Attendees

DISTRIBUTION:

MCaruso (NRO)	DHarrison (NRR)	RidsNrrDraApla
RCarpenter (RES)	TKeynon (NRO)	RidsOgcMailCenter Resource
MDrouin (RES)	RLobel (NRR)	RidsAcrcAcnw_MailCTR Resource
AGilbertson (RES)	MStutzke (RES)	RidsRgnlMailCenter Resource
GCranson (NRO)	RidsOpaMail Resource	RidsNrrDraApob
	MSnodderly (NRR)	

ADAMS Accession No.: ML112450297 NRR-006

OFFICE:	NRR/DRA
NAME:	SLaur
DATE:	09/06/2011

OFFICIAL RECORD COPY

LIST OF ATTENDEES

NRC Public Meeting on Proposed Changes To Clarify The Defense-in-Depth Philosophy of Regulatory Guide RG 1.174

September 1, 2011, 08:30 AM – 12:30 PM
NRC Church Street Building, 21 Church Street, Room 6B1, Rockville, MD

Name	Organization	Phone	E-mail
<i>Participated in Person</i>			
Jana Bergman	Curtiss-Wright	301-956-4184	jbergman@curtisswright.com
Mark Caruso	NRC/NRO	301-415-1310	Mark.caruso@nrc.gov
Wei-Wu Chao	Taiwan Atomic Energy Council Representative in DC	240-393-9320	wwchao@aec.gov.tw
Greg Cranston	NRC/NRO/ARP	301-415-0546	Gregory.cranston@nrc.gov
Stephen Dinsmore	NRC/NRR/DRA	301-415-8482	Stephen.dinsmore@nrc.gov
Mary Drouin	NRC/RES	301-251-7574	Mary.Drouin@nrc.gov
Don Dube	NRC/NRO	301-415-1483	Donald.dube@nrc.gov
Anders Gilbertson	NRC/RES	301-251-7592	Anders.Gilbertson@nrc.gov
Thomas Hafera	Worley Parsons	610-855-3259	Thomas.hafera@worleyparsons.com
Fred Hoffert	Worley Parsons	610-855-2708	Alfred.hoffert@worleyparsons.com
Thomas Kenyon	NRC/NRO/ARP	301-415-1120	Thomas.kenyon@nrc.gov
Steven Laur	NRC/NRR/DRA	301-415-2889	Steven.laur@nrc.gov
Stanley Levinson	AREVA NP Inc.	434-832-2768	stanley.levinson@areva.com
Gareth Parry	Erin	520 777 4285	gwparry@erineng.com
Michael Snodderly	NRC/NRR/DRA	301-415-1801	michael.snodderly@nrc.gov
Rachel Vaurher	NRC/NRO/DE	301-415-5312	Nrcoip6@earthlink.net
<i>Participated via Telephone</i>			
Biff Bradley	NEI	202-739-8083	reb@nei.org
Nancy Chapman	Bechtel	301-228-6025	ngchapma@bechtel.com
Bill Galyean	NuScale Power	541-360-0529	BGalyean@NuScalePower.com
Sarah Kleeb	NuScale Power	541-360-0579	skleeb@nuscalepower.com
Frank Novak	GE Hitachi	910-819-4637	francis.novak@ge.com
Jason Pottorf	NuScale Power	541-360-0533	JPottorf@nuscalepower.com
Ray Schneider	Westinghouse	860-731-6461	schneire@westinghouse.com
George B Stramback	Westinghouse	408-392-7461	strambgb@westinghouse.com
Doug True	Erin	925-943-7077	detrue@erineng.com
Wendell Wagner	NuScale Power	541-360-0524	wwagner@nuscalepower.com

Enclosure