Owen, Lucy

From: SNL Energy [snlupdate@snl.com]
Sent: Thursday, March 17, 2011 9:30 AM
To: Collins, Elmo
Subject: Smart Utility Customer Engagement & Satisfaction Summit

Smart Utility Customer Engagement & Satisfaction Summit.

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Chris Chen
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AG/120

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From:	Csontos, Aladar
To:	Csontos, Aladar; Cumblidge, Stephen; Focht, Eric; Klein, Paul; Malik, Shah; Norris, Wallace; Prokofiev, Iouri; "Rachel Vaucher"; Benson, Michael; Case, Michael; Sangimino, Donna-Marie; Nove, Carol; Kirk, Mark; Rudland, David; Stevens, Gary; Iyengar, Raj; Rathbun, Howard
Subject:	RE: Going Away Luncheon for Rachel Vaucher
Date:	Thursday, March 17, 2011 9:31:31 AM

For those who are going, I only have 1 car. Who else has a vehicle that we can take to Branded 72? If we don't have one, then we'll have to switch and go across the street to the town center. Let's meet at my office at 11:30am.

-----Original Appointment-----
From: Csontos, Aladar
Sent: Tuesday, March 15, 2011 5:16 PM
To: Csontos, Aladar; Cumblidge, Stephen; Focht, Eric; Klein, Paul; Malik, Shah; Norris, Wallace; Prokofiev, Iouri; 'Rachel Vaucher'; Benson, Michael; Case, Michael; Sangimino, Donna-Marie; Nove, Carol; Kirk, Mark; Rudland, David; Stevens, Gary; Iyengar, Raj; Rathbun, Howard
Subject: Going Away Luncheon for Rachel Vaucher
When: Thursday, March 17, 2011 11:30 AM-12:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Branded 72 - Gude Drive

From: Wucher, John
To: Wood, Johnny; Coyne, Kevin
Subject: FW: Software version upgrade install request (Tracking # 10208)
Date: Thursday, March 17, 2011 9:46:21 AM

You have been approved to install the SAPHIRE 8 multi-thread version on your NRC workstations.

JOHN WUCHER
IT Specialist
(301) 251-7960
Mail stop: 06D20M
CSB 06D01

From: ECCB Resource
Sent: Thursday, March 17, 2011 9:39 AM
To: Wucher, John
Cc: ONeal, Daniel
Subject: RE: Software version upgrade install request (Tracking # 10208)

John:

Thanks you for submitting the ECR for the SAPHIRE upgrade to the ECCB.

NRC's Technical Reference Model (TRM) shows that the product you requested is already in use in the NRC's environment, and the CTF test on the upgrade version has been done. The product is authorized to be used on the NRC networked computers. For installation, please forward your request plus this email to your IT Coordinator or OIS CSC.

Here is a link to the TRM:
http://portal.nrc.gov/edo/ois/bpiad/EASB/TRM/Find_A_Standard/Lists/Master%20Standards%20List/DispForm.aspx?ID=2581&Source=http%3A%2F%2Fportal%2Enrc%2Egov%2Fedo%2Fois%2Fbpiad%2FEASB%2FTRM%2FFind%5FA%5FStandard%2FPages%2FWildcardSearch%2Easpx%3FFilterName%3DTitle%26FilterMultiValue%3D%2ASAPHIRE%2A

Since the NRC is in the process of migrating to the Window 7, please schedule the Window 7 test at the CTF before the migration.

If you have any further questions, please reply to this email, and use the tracking number 10208 in the subject line.

Regards,

Evgenia Shon
ECCB Support

From: Wucher, John
Sent: Wednesday, March 16, 2011 9:59 AM
To: ECCB Resource
Subject: Software version upgrade install request.

JOHN WUCHER
IT Specialist
(301) 251-7960
21 Church Street
Rockville, MD 20852
Mail stop: 06D20M

AG/122

From:	B.Al-Madhi@iaea.org
To:	mission.mali@bluewin.ch; info@nigeriaembassyvienna.com; info@jordanembassy.at; bambadath@yahoo.fr; momari@jordanembassy.at; general@uae-iaea.org; office@bhmission.at; embassy@kazakhstan.at; embassy.lebanon@inode.at; office@libyanembassyvienna.at; saudimission.un@saudiembassy.at; officialmail@aea.ac.lk; piallat@botschaft-senegal.de; info@bahrain-mission.ch; Adorjan@haea.gov.hu; asmolov@nsi.kiae.ru; lucian.biro@cncan.ro; Borchardt, Bill; lennart.carlsson@ssm.se; marie-pierre.comets@asn.fr; john.froats@yahoo.ca; Grobe, Jack; hirano.masashi@jaea.go.jp; kudo-fumio@jnes.go.jp; sakamoto-kazunobu@jnes.go.jp; kharlam-sa@rosenergoatom.ru; pkhot@npcil.co.in; hklonk@bfs.de; patrick.majerus@ms.etat.lu; Mzmsebenzi@nnr.co.za; soaresjc@cii.fc.ul.pt; Mikulas.Turner@ujd.gov.sk; cgv@csn.es; michel.asty@wanadoo.fr; marcel.maris@belv.be; rob.campbell@hse.gsi.gov.uk; kimhj@kins.re.kr; a.mannan@pnra.org; jukka.laaksonen@stuk.fi; albert.frischknecht@ensi.ch; tryan@rpii.ie; nnsalgj@sina.com; jiangwei@sepa.gov.cn; sakamoto-kazunobu@jnes.go.jp; DLange@ltbridge.com; nawadi@kisr.edu.kw; khs00@mest.go.kr; wmsim@mest.go.kr; peng.jun@mep.gov.cn; shengang001@gmail.com; yvonne.schweiwiller@ensi.ch
Cc:	M.Svab@iaea.org
Subject:	Uploading answers to CNSWeb - no deadline!
Date:	Thursday, March 17, 2011 9:49:36 AM

Dear Colleagues,

This is to inform you that the system (CNSWeb) will not prevent you from uploading answers at any date or time! That means, you are able to upload your answers even after the 18 March 2011.

Best regards

Balsam Al-Madhi (Ms.)

Safety Service Assistant

International Atomic Energy Agency (IAEA)

Regulatory Activities Section (RAS)

Division of Nuclear Installation Safety

Department of Nuclear Safety and Security

Tel: (+43 1) 2600-22521

Fax: (+43 1) 26007-22521

E-mail: B.Al-Madhi@iaea.org

AG/123

From: Chan, Deborah
To: Richards, Stuart; Case, Michael; Coe, Doug; Coyne, Kevin
Subject: A couple of changes in the spreadsheets...
Date: Thursday, March 17, 2011 9:53:59 AM

Good morning,

I just found a couple of folks that weren't moved to new orgs., so please disregard them in your spreadsheets. There may be others that I didn't catch also (unfortunately), so please advise if you see other oversights.

Mike/Stu – K. Lam should now be in PMDA and will receive her mid-year there.
Doug/Kevin – Sibel Goldfeiz should now be in PMDA (and does not need a mid-year from DRA).

Thanks,
Debbie

AG/124

From: ONeal, Daniel
To: Evans, Kevin
Cc: Wood, Jeffery
Subject: FW: Software version upgrade install request (Tracking # 10208)
Date: Thursday, March 17, 2011 9:56:50 AM

Kevin,

FYI.

Dan

From: ECCB Resource
Sent: Thursday, March 17, 2011 9:39 AM
To: Wucher, John
Cc: ONeal, Daniel
Subject: RE: Software version upgrade install request (Tracking # 10208)

John:

Thanks you for submitting the ECR for the SAPHIRE upgrade to the ECCB.

NRC's Technical Reference Model (TRM) shows that the product you requested is already in use in the NRC's environment, and the CTF test on the upgrade version has been done. The product is authorized to be used on the NRC networked computers. For installation, please forward your request plus this email to your IT Coordinator or OIS CSC.

Here is a link to the TRM:
http://portal.nrc.gov/edo/ois/bpiad/EASB/TRM/Find_A_Standard/Lists/Master%20Standards%20List/DispForm.aspx?ID=2561&Source=http%3A%2F%2Fportal%2Enrc%2Egov%2Fedo%2Fois%2Fbpiad%2FEASB%2FTRM%2FFind%5FA%5FStandard%2FPages%2FWildcardSearch%2Easpx%3FFilterName%3DTitle%26FilterMultiValue%3D%2ASAPHIRE%2A

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If you have any further questions, please reply to this email, and use the tracking number 10208 in the subject line.

Regards,

Yasmin Tejpar
ECCB Support

From: Wucher, John
Sent: Wednesday, March 16, 2011 9:59 AM
To: ECCB Resource
Subject: Software version upgrade install request.

JOHN WUCHER
IT Specialist
(301) 251-7960
21 Church Street
Rockville, MD 20852
Mail stop: 06D20M

AG/125

From: Energy Center University
To: Case, Michael
Subject: Integrative Design with Helen Kessler and Sachin Anand, Apr 14 in Chicago
Date: Thursday, March 17, 2011 9:48:12 AM

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Sachin Anand, P.E., LEED AP
Principal, dbHMS

Sachin Anand has designed, commissioned and managed commercial, residential, healthcare, industrial and award-winning sustainable projects. He runs the dbHMS design team with uncompromising quality, striving to maintain client goals with creative design solutions. more...

Helen Kessler, FAIA, LEED AP
President, HJKessler Associates

Helen Kessler is President of HJKessler Associates, a sustainable design, LEED, energy efficiency and commissioning consulting service founded in 2003. She has over 30 years experience in sustainable design and has had a leading role on over three dozen LEED projects including several LEED Platinum Projects. more...

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AG/126

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From:	Flory, Shirley on behalf of RidsResOd Resource
To:	Case, Michael; Coe, Doug; Coyne, Kevin; Gibson, Kathy; Richards, Stuart; Sangimino, Donna-Marie; Scott, Michael; Sheron, Brian; Uhle, Jennifer; Valentin, Andrea
Subject:	FW: ACRS Committee Letter
Date:	Thursday, March 17, 2011 12:14:47 PM
Attachments:	ML1107304244.pdf ML110730424.ADC
Importance:	High

From: Meador, Sherry
Sent: Thursday, March 17, 2011 11:12 AM
To: Bates, Andrew; Champ, Billie; Clayton, Kathleen; RidsEdoMailCenter Resource; RidsFsmeOd Resource; Jaegers, Cathy; Lewis, Antoinette; Lien, Peter; McKelvin, Sheila; Mike, Linda; RidsNmssOd Resource; RidsNroOd Resource; RidsNrrPMAAdams Resource; RidsNsirOd Resource; RidsOcaMailCenter Resource; RidsOcaaMailCenter Resource; RidsOgcMailCenter Resource; RidsOigMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsResOd Resource; Rini, Brett; RidsSecyMailCenter Resource; Shea, Pamela; Wallace, Denise; Wright, Darlene
Subject: ACRS Committee Letter
Importance: High

Letter to the Honorable Gregory B. Jaczko, Chairman, from Said Abdel-Khalik, ACRS Chairman, dated March 16, 2011, Subject: SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews

ML110730424

Thank you
Sherry

AG/127

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

March 16, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SECY-11-0024, "USE OF RISK INSIGHTS TO ENHANCE THE SAFETY FOCUS OF SMALL MODULAR REACTOR REVIEWS"

Dear Chairman Jaczko:

During the 581st meeting of the Advisory Committee on Reactor Safeguards, March 10-12, 2011, we reviewed SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews." Our Future Plant Designs Subcommittee also reviewed this matter during a meeting on February 9, 2011. During these meetings we had the benefit of discussions with representatives of the NRC staff and the Nuclear Energy Institute. We also had the benefit of the documents referenced.

CONCLUSIONS AND RECOMMENDATION

1. The approach described in the revised draft introduction of NUREG-0800 for license review of integrated pressurized water reactors (iPWRs) is an appropriate first step for near-term Small Modular Reactor (SMR) applications.

2. Development of design-specific review plans for iPWRs is a crucial step to ensure that high safety standards are maintained for unique designs. Progress in this area is linked to development of complete and stable designs.

3. The staff should consider the use of PIRT[1]-like processes to guide development of the design-specific review plans.

4. The longer-term approach for license review of non-Light Water Reactor (LWR) SMRs is the logical extension of NUREG-1860. The proposed pilot studies can provide necessary information for full development of a new framework, while not putting the licensing process at risk.

[1] PIRT - Phenomena Identification and Ranking Tables

BACKGROUND

The Commission issued a Staff Requirements Memorandum (SRM) dated August 31, 2010, directing the staff to integrate risk insights and develop risk-informed licensing review plans for each SMR design. The SRM also required the staff to build on the SMR and Next Generation Nuclear Plant (NGNP) review insights, as well as the earlier technology neutral framework of NUREG-1860, to develop a new risk-informed licensing framework for the longer term. A number of policy issues related to SMR licensing were identified in SECY-10-0034, and the Commission asked the staff to identify resolution strategies. The staff is preparing a series of SECY papers on these policy issues over the coming year. SECY-11-0024 was the first of these to be sent to the Commission.

DISCUSSION

The approach developed by the staff for using risk insights to enhance the safety focus of SMR reviews includes two elements: a risk-informed review framework for near term iPWR designs; and a longer term risk-informed, performance-based, regulatory framework for the licensing of non-LWR SMRs. The framework for the review of iPWRs will be provided in a revised introduction section of NUREG-0800, Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants. Based on the iPWR framework, design-specific review plans will be developed to tailor the guidance in the SRP for each SMR design.

A draft version of the risk-informed framework for the review of iPWRs was included as an enclosure to SECY-11-0024. It includes several examples of applying the framework to specific systems. Work is underway on design-specific review plans for the designs deemed most likely to be submitted early. The staff has begun incorporating lessons learned from recent design certification reviews into these design-specific review plans for iPWRs.

We see the draft framework as a good first step and look forward to working with the staff as the framework and design-specific review plans are faired out through the first applications. In general, the approach is developing along practical lines and will be an improvement over trying to force-fit SMR reviews to guidance for traditional LWRs. PIRT-like processes that systematically identify key technical issues for each SMR design could enhance the process of developing design-specific review plans.

The framework is intended to be consistent with current regulatory requirements and Commission policy statements. The stated goal is to provide guidance to the staff on aligning the review focus and resources to aspects of the design that contribute most to safety in order to enhance the efficiency of the review process. This will require intensive examination of unique design features that may not have been clearly called out in the traditional LWR SRP. It may also eliminate some aspects of the LWR SRP that do not apply to the specific SMR and should reduce emphasis on system elements shown to be less important to safety.

It is expected that some elements of the SMR applications will be risk informed. Therefore, they may require more complete and design-specific probabilistic risk assessments (PRAs) than those commonly associated with traditional LWR design certification applications.

Technically effective and efficient implementation of the proposed risk-informed review framework requires early confidence that structures, systems and components (SSCs) and licensing basis events are categorized appropriately according to their relative risk significance. The categorization process will rely heavily on the quantitative results from the design-specific PRA, supplemented as necessary by qualitative input from expert panels.

To facilitate a balanced assessment of the relative risk significance of specific SSCs for the full spectrum of potentially important accident scenarios, the PRA should contain an integrated quantification of the risks from internal and external events including fires, flooding, severe weather phenomena, seismic hazards, and other identified design-specific vulnerabilities. This implies either a site-specific PRA or a PRA of a pseudo site that must bound the external events for all potential sites.

The PRA models should be of sufficient scope, depth of detail, and technical quality to support the risk significance determinations with high confidence that the results and conclusions will remain stable throughout the design review process. Although specific details of the plant design may continue to evolve, the fundamental PRA scope, technical quality, assumptions, and data should be confirmed at the start of the design review. Experience has shown that initial use of simplified models to make preliminary risk determinations with later development of a more complete PRA should be avoided, because that process will likely introduce inefficient and counter-productive review iterations as the SSC populations in each significance category change over time.

Because SMRs could be desired for application in remote and harsh environments (severe cold, strong wind driven dust from desert sand, unusual contaminants in available water supplies, etc.), sufficient caveats should accompany the design and its PRA as to the range of environmental conditions that would require specialization of data and design assumptions.

Consistent with our past reports on the development of the technology neutral framework, we support the staff's recommendation to develop a new risk-informed, performance-based regulatory framework for non-LWR SMRs over the next several years. As we recommended previously, applying the concepts from NUREG-1860 to specific designs is the best way to move that process toward fruition. The idea of developing pilot applications is a good one. The staff plans a pilot study based on NGNP that progresses in parallel with the chosen regulatory pathway described in a report titled "Next Generation Nuclear Plant Licensing Strategy - A Report to Congress," dated August 2008, and another pilot study based on an iPWR that will also run in parallel with the formal review based on the iPWR framework discussed earlier. The benefits of this approach could be substantial. It would provide evidence about the actual feasibility of the new framework and would provide a comparison with more traditional approaches, facilitating evaluation of potential impacts on efficiency and effectiveness.

Although not directly related to the subject of this letter, we would like to observe that SMRs are generally novel reactor designs for which there is not an extensive base of operational experience. Much of the safety review will rely on computer code simulations of plant response. Modern trends in computer modeling lead to greater integration of phenomena with complicated coupling. Still it is not evident that even sophisticated modeling will adequately account for all pertinent phenomena and processes. There should be criteria specifying where the staff will require experimental demonstration of predicted plant performance.

We look forward to continuing our exchange with the staff, including review of the coming SECY papers on policy and operational issues.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," February 18, 2011 (ML110110688)

2. COMGBJ-10-0004/COMGEA-10-0001, "Use of Risk Insights to Enhance Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010 (ML102510405)

3. SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs," March 28, 2010 (ML093290245)

4. NUREG-1860, "Feasibility Study for a Risk-Informed and Performance-Based Regulatory Structure for Future Plant Licensing, Volumes 1 and 2," December 2007 (ML073400763)

5. ACRS Letter, Technology-Neutral Framework for Future Plant Licensing, dated April 20, 2007 (ML071100303)

6. ACRS Letter, Draft Commission Paper on Staff Plan Regarding a Risk-Informed and Performance-Based Revision to 10 CFR Part 50, dated May 16, 2007 (ML071360076)

7. ACRS Letter, Development of a Technology-Neutral Regulatory Framework, dated September 26, 2007 (ML072530598)

8. Next Generation Nuclear Plant Licensing Strategy - A Report to Congress, dated August 2008 (ML110620503)

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Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. SECY-11-0024, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," February 18, 2011 (ML110110688)

2. COMGBJ-10-0004/COMGEA-10-0001, "Use of Risk Insights to Enhance Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010 (ML102510405)

3. SECY-10-0034, "Potential Policy, Licensing, and Key Technical Issues for Small Modular Nuclear Reactor Designs," March 28, 2010 (ML093290245)

4. NUREG-1860, "Feasibility Study for a Risk-Informed and Performance-Based Regulatory Structure for Future Plant Licensing, Volumes 1 and 2," December 2007 (ML073400763)

5. ACRS Letter, Technology-Neutral Framework for Future Plant Licensing, dated April 20, 2007 (ML071100303)

6. ACRS Letter, Draft Commission Paper on Staff Plan Regarding a Risk-Informed and Performance-Based Revision to 10 CFR Part 50, dated May 16, 2007 (ML071360076)

7. ACRS Letter, Development of a Technology-Neutral Regulatory Framework, dated September 26, 2007 (ML072530598)

8. Next Generation Nuclear Plant Licensing Strategy – A Report to Congress, dated August 2008 (ML110620503)

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NAME	MBanerjee	MBanerjee	CSantos	EHackett	EMH for SAK
DATE	03/16/11	03/16/11	03/16/11	03/17/11	03/17/11

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Letter to The Honorable Gregory B. Jaczko, Chairman, from Said Abdel-Khalik, ACRS Chairman dated March 16, 2011

SUBJECT: SECY-11-0024, "USE OF RISK INSIGHTS TO ENHANCE THE SAFETY FOCUS OF SMALL MODULAR REACTOR REVIEWS"

ML# 110730424

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Owen, Lucy

From: EUCI Events [events@eucievents.com]
Sent: Thursday, March 17, 2011 12:15 PM
To: Collins, Elmo
Subject: The Future of Nuclear Project Development: Economics and Costs

Economic and Cost-Realities of Nuclear Project Development

May 2-3, 2011 :: Rockville, MD

Overview

Recent international developments in both industry and government will clearly impact the future expansion of nuclear power. How will these developments influence economic considerations in the analysis of the viability of nuclear projects? What are the facts and what is the fiction?

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- Cost risks in nuclear projects (licensing, construction, and operation)
- Traditional ways industries control costs and how that applies to nuclear energy
- Relative nuclear cost-contributors in construction and operations
- Investors' concerns about nuclear projects and how they can be addressed
- How 10 CFR Part 52 attempts to address (and manage) the cost-question, including issues that could lead to licensing problems
- Factors that project managers should anticipate in order to control cost risk and avoid falling into old cost traps, repeating past nuclear cost-overrun performance
- Methods to manage and control nuclear project costs
- Issues that threaten nuclear cost-escalation

Full Agenda

Presented By

Jim August, P.E., Nuclear Engineer, CORE, Inc.

Bryan Kelly, Esquire, Principal, Surety Insider LLC

Full Instructor Bios

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AG/128

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To: Ruland, William
Subject: Just-Posted Power Jobs - MYR Group Inc., Old Dominion Electric Cooperative (ODEC), PNM
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From: Narick, Marianne

To: Galloway, Melanie; Holian, Brian; Lund, Louise; Nelson, Robert; Giitter, Joseph; Howe, Allen; Brown, Frederick; Cheok, Michael; Quay, Theodore; McGinty, Tim; Blount, Tom; Ruland, William; Bahadur, Sher; Lubinski, John; Hiland, Patrick; Skeen, David; Lee, Samson; Weerakkody, Sunil; Givvines, Mary; Ferrell, Kimberly; Adams, Alexander; Anderson, Shaun; Architzel, Ralph; Armstrong, Garry; Arndt, Steven; Attard, Anthony; Audrain, Margaret; Auluck, Rajender; Azeem, Almas; Basavaraju, Chakrapani; Bedi, Gurjendra; Beissel, Dennis; Billoch, Araceli; Boggi, Michael; Bowen, Jeremy; Bowman, Eric; Brady, Bennett; Bucher, April; Bulavinetz, Richard; Caponiti, Kathleen; Carte, Norbert; Cartwright, William; Champion, Bryan; Cheruvenki, Ganesh; Cho, Caroline; Chung, Pong; Clifford, Paul; Collins, Jay; Conatser, Richard; Cowdrey, Christian; Cusumano, Victor; Daily, John; Daniel, Richard; Darbali, Samir; Davidson, Evan; DiMeglio, Francis; Dinsmore, Stephen; Dozier, Jerry; Edmonds, Yvonne; El-Bassioni, Adel; Fairbanks, Carolyn; Farnan, Michael; Farzam, Farhad; Fields, Leslie; Figueroa, Sandra; Font, Ossy; Frahm, Ronald; Frumkin, Daniel; Gardocki, Stanley; Gavrilas, Mirela; Geiger, Ervin; Gettys, Evelyn; Goel, Vijay; Gramm, Robert; Green, Kimberly; Grenier, Bernard; Hall, Kim; Hannum, Karyn; Hardesty, Duane; Harwell, Shawn; Heida, Bruce; Hoffman, Keith; Hopkins, Ogbonna; Howard, Kent; Huang, John; Huang, Tai; Iqbal, Naeem; James, Burnie; Jessup, William; Johnson, Andrew; Johnson, Deborah; Kaizer, Joshua; Katoski, Alice; Keegan, Elaine; Kemper, William; Kennedy, William; Kipfer, Lorna; Klos, John; Konduri, Indu; Kuntz, Robert; Lain, Paul; Lappert, Glenna; Laur, Steven; Lee, Michael; Lehman, Bryce; Lehning, John; Li, Rui; Lobel, Richard; Lois, Kosmas; Lovell, Louise; Mallory, Rashaunda; Martin, Kamishan; Masciantonio, Armando; Mazumdar, Subinoy; McLellan, Thomas; Medoff, James; Meighan, Sean; Mills, Daniel; Min, Seung; Mitman, Jeffrey; Montgomery, Cindy; Moser, Michelle; Mossman, Timothy; Moulton, Charles; Murphy, Emmett; Nakanishi, Tony; Naujock, Don; Nelson, David; Nguyen, Caroline; Nguyen, John; Nguyen, Quynh; Norkin, Donald; Nove, Carol; Oliveto, Betsy; Orenak, Michael; Palla, Robert; Panicker, Mathew; Pannier, Stephen; Parillo, John; Parks, Benjamin; Patel, Jigar; Perin, Vanice; Pham, Bo; Pittiglio, Clayton; Prinaris, Andrew; Purciarello, Gerard; Quichocho, Jessie; Randiki, Caroline; Raval, Janak; Reed, Elizabeth; Rice, Ayanna; Richter, Brian; Robinson, Jay; Roche, Kevin; Rogers, Billy; Rohrer, Shirley; Rowley, Jonathan; Sakai, Stacie; Sastry, Gayathri; Scales, Kerby; Schneider, Stewart; Sheikh, Abdul; Sheng, Simon; Simms, Sophonia; Simpson, JoAnn; Smith, Edward; Smith, Pat; Smith, Wilkins; Stattel, Richard; Steger (Tucci), Christine; Stuyvenberg, Andrew; Sun, Robert; Sun, Summer; Susco, Jeremy; Szabo, Aaron; Taylor, Chutima; Thomas, Eric; Thompson, John; Titus, Brett; Torres, Paulette; Traiforos, Spyros; Tran, Linh; Travers, Allison; Tsao, John; Tsirigotis, Alexander; Valencia, Sylvia; Valentine, Nicholee; Vaughn, Stephen; Vettori, Robert; Vick, Lawrence; Vogt-Lowell, Rene; Voth, Marcus; Walker(NRR), Sandra; Wall, Scott; Warren, Brenett; Washington, Dorothea; Weaver, Kathy; Wertz, Geoffrey; Wertz, Trent; Williams, Tamera; Wong, Albert; Wong, Emma; Wong, Pamela; Wood, Kent; Woodyatt, Diana; Wu, Shih-Liang; Wyman, Stephen; Yee, Linda; Yee, On; Yoder, Matthew

Cc: Lee, Michael; Nguyen, Caroline; Le, Hong; Bailey, Stewart; Boyce, Tom (RES); Carlson, Robert; Casto, Greg; Chernoff, Harold; Cranston, Gregory; Dennig, Robert; Eads, Johnny; Elliott, Robert; Franovich, Rani; Harrison, Donnie; Imboden, Andy; James, Lois; Khanna, Meena; Klein, Alex; Kobetz, Timothy; Markley, Michael; McHale, John; Mendiola, Anthony; Mitchell, Matthew; Murphy, Martin; Pelton, David; Raghavan, Rags; Rosenberg, Stacey; Salgado, Nancy; Tate, Travis; Taylor, Robert; Thorp, John; Ulses, Anthony; Wilson, George; Wrona, David

Subject: ROMA Database and Work Related to 3rd QTR APP Updates

Date: Thursday, March 17, 2011 12:21:54 PM

Hi all:

I believe Michael Lee had communicated to you all that there was a data issue with ROMA re: the carryover figures that was being corrected by March 11, 2011 by PMDA staff. A TM just came to my office using a spending balance report pulled from ROMA pulled in the past couple of weeks but prior to March 11, stating that the figures were incorrect and he was unable to reconcile in order to update his spending plans. We pulled the same report today, and the figures are correct.

Please use only spending balance reports pulled after March 11, 2011 to proceed with updating your spending plans for the 3rd QTR APP update as requested by your TAPMs… Otherwise, you will be likely be using faulty financial data.

Thanks very much and I apologize for the inconvenience resulting from this inaccuracy of the ROMA carryover figures that occurred a week or so ago. Again, the problem has been resolved and data in ROMA for carryover was corrected as of March 11, 2011.

Marianne Narick

Chief, NRR Contracts Management Branch

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US Nuclear Regulatory Commission
301-415-2175

From: Federal Computer Week
To: Case, Michael
Subject: Best Practices from Oracle & Gartner on Data Center Consolidation - Free Seminar
Date: Thursday, March 17, 2011 12:27:59 PM

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Murphy, Andrew

From: American Geophysical Union [fm-help@agu.org]
Sent: Thursday, March 17, 2011 12:31 PM
To: Murphy, Andrew
Subject: Key deadlines for 2011 AGU Fall Meeting

Key dates and deadlines for the Fall Meeting are fast approaching!

Session Proposal submission:	Abstract submission:
Closes 20 April 2011	**Opens 8 June 2011**
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From: Correia, Richard
To: Coe, Doug; Lui, Christiana
Subject: RE: PMT Director Deputy
Date: Thursday, March 17, 2011 12:32:42 PM

Not any problem Doug. I enlisted to help out the LT.

From: Coe, Doug
Sent: Wednesday, March 16, 2011 7:38 PM
To: Correia, Richard; Lui, Christiana
Subject: RE: PMT Director Deputy

Rich - Fri-Sun Apr 7-9 is quite doable and not a large impact on DRA, I wouldn't leave you hanging!

From: Correia, Richard
Sent: Wednesday, March 16, 2011 4:54 PM
To: Lui, Christiana; Coyne, Kevin; Coe, Doug
Subject: RE: PMT Director Deputy

Staffing the IRC is getting a lot of discussion. The ET wants to be sure the folks that are on the teams now do not get burned out so they re-thinking how they will want to staff up for the long term (likely one month). We've seen some solicitations already and expect to see more. Some will have to be "trained" but I would think in this particular instance that can be managed quite well. More to follow I'm sure.

From: Lui, Christiana
Sent: Wednesday, March 16, 2011 4:51 PM
To: Coyne, Kevin; Coe, Doug
Cc: Correia, Richard
Subject: RE: PMT Director Deputy

Sorry, I did not mean to cause further disruption to the ongoing work. Just want to see if there is any room to help staff the IRC since it's likely to go on for quite some time.

From: Coyne, Kevin
Sent: Wednesday, March 16, 2011 4:36 PM
To: Coe, Doug
Cc: Lui, Christiana; Correia, Richard
Subject: RE: PMT Director Deputy

Thanks for the clarification Doug – it was the "....thru April 10" in Chris' email that caught my eye. Based on your earlier communication with Brian where you had volunteered for IRC duty as early as Monday, I just wanted to make sure I wasn't the only one minding the shop.

From: Coe, Doug
Sent: Wednesday, March 16, 2011 4:31 PM
To: Coyne, Kevin
Cc: Lui, Christiana; Correia, Richard
Subject: RE: PMT Director Deputy

Kevin, John Lubinski has accomodated me quite well. Not a large impact - see previous email. Rich will

be onboard.
Doug

From: Coyne, Kevin
Sent: Wednesday, March 16, 2011 3:49 PM
To: Coe, Doug
Cc: Lui, Christiana
Subject: RE: PMT Director Deputy

Not to throw ice water on this, but who will be running RES/DRA and turning over to Rich Correia while Doug is in the IRC? We are already short one SES manager in DRA...

From: Coe, Doug
Sent: Wednesday, March 16, 2011 2:38 PM
To: Lui, Christiana; Lubinski, John
Cc: Correia, Richard; Coyne, Kevin
Subject: RE: PMT Director Deputy

I will be back in the office on Monday and am willing to pitch in as needed although I was just getting oriented to the PMT position for the NLE, not having any prior experience there. If I could have next week to help smooth the transition for Rich Correia to take over as Division Director that would be optimal for us. Let me know where you would like me to fill in and I will see if I can arrange it with Rich.

From: Lui, Christiana
Sent: Wednesday, March 16, 2011 2:01 PM
To: Coe, Doug
Subject: Fw: PMT Director Deputy

Do you think you can pitch in? If so, let John Lubinski know. We're looking to staff the PMT Director's position thru April 10.

From: Lubinski, John
To: Cool, Donald; Reis, Terrence; Holahan, Patricia; Holahan, Vincent; Milligan, Patricia; Sullivan, Randy; Tappert, John; Lui, Christiana; Gibson, Kathy
Sent: Wed Mar 16 13:11:13 2011
Subject: PMT Director Deputy

I have attached a proposed schedule for us to act as PMT director. I am not sure of everyone's schedule but have heard from a few and included those individuals in the first parts of the schedule.

Please review the attached and confirm your available for 3/19 - 3/26 by noon tomorrow. Also, please provide comments on the remainder of the schedule asap.

Thanks

From: Elly Kreijkes
To: Ruland, William
Subject: Cleaner fossil power approaches in Indonesia, Thailand and Malaysia
Date: Thursday, March 17, 2011 12:34:40 AM

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Dear William Ruland,

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Gwen Andrews, Vice President, Power and Environmental Policies Australia/Asia, ***Alstom,*** *Australia*

PLN's approach in coal power production in the most environmentally friendly way using innovative approaches and technologies such as lignite drying technology
Mr Nur Pamudji, Director for primary energy, ***PPT LN (Persero)****, Indonesia*

Structuring of high calibre, innovative carbon deals
Mark Meyrick, Head Carbon Desk, ***Eneco****, The Netherlands*

Technology update on the clean' 660MW coal-fired power plant in Thailand (Gheco-One)
Mr Heikki Pudas, Executive Vice President Project Development and Business, ***Glow Energy Public Co. Ltd,*** *Thailand*

Critical success factors for hydro power project developments in the Philippines
Emmanuel Rubio, CEO, ***SN Aboitiz Power Benguet (SNAP-Benguet),*** *Philippines*

Plan, Policy and Performance, the key for promotion of renewable energy and China's wind power development
Maofeng Luo, Vice President, ***China WindPower****, China*

Limited Recourse Financing in Hydropower Development in Laos
Xaypaseuth Phomsoupha, Director General, ***Department of Energy Promotion and Development, Ministry of Energy and Mines****, Lao PDR*

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To:	NRCREP Resource; RidsManager Resource; RidsResDE Resource; Orr, Mark; Case, Michael
Subject:	Comment (1) of Cindy K. Bladey on Behalf of NEI, on Draft Regulatory Guide (DG) 1245, "Inspection of Water-Control Structures Associated with Nuclear Power Plants." 03/15/2011
Date:	Thursday, March 17, 2011 12:43:29 PM
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Title	Comment (1) of Cindy K. Bladey on Behalf of NEI, on Draft Regulatory Guide (DG) 1245, "Inspection of Water-Control Structures Associated with Nuclear Power Plants."
Docket Number	PROJ0689
Document Date	03/15/2011
Author Name	Butler J C
Author Affiliation	Nuclear Energy Institute (NEI)
Addressee Name	Bladey C K
Addressee Affiliation	NRC/ADM/DAS/RDEB
Document Type	General FR Notice Comment Letter
Availability	Publicly Available
Date to be Released	03/25/2011
Document Sensitivity	Non-Sensitive
Comment	
Date Added	03/17/2011

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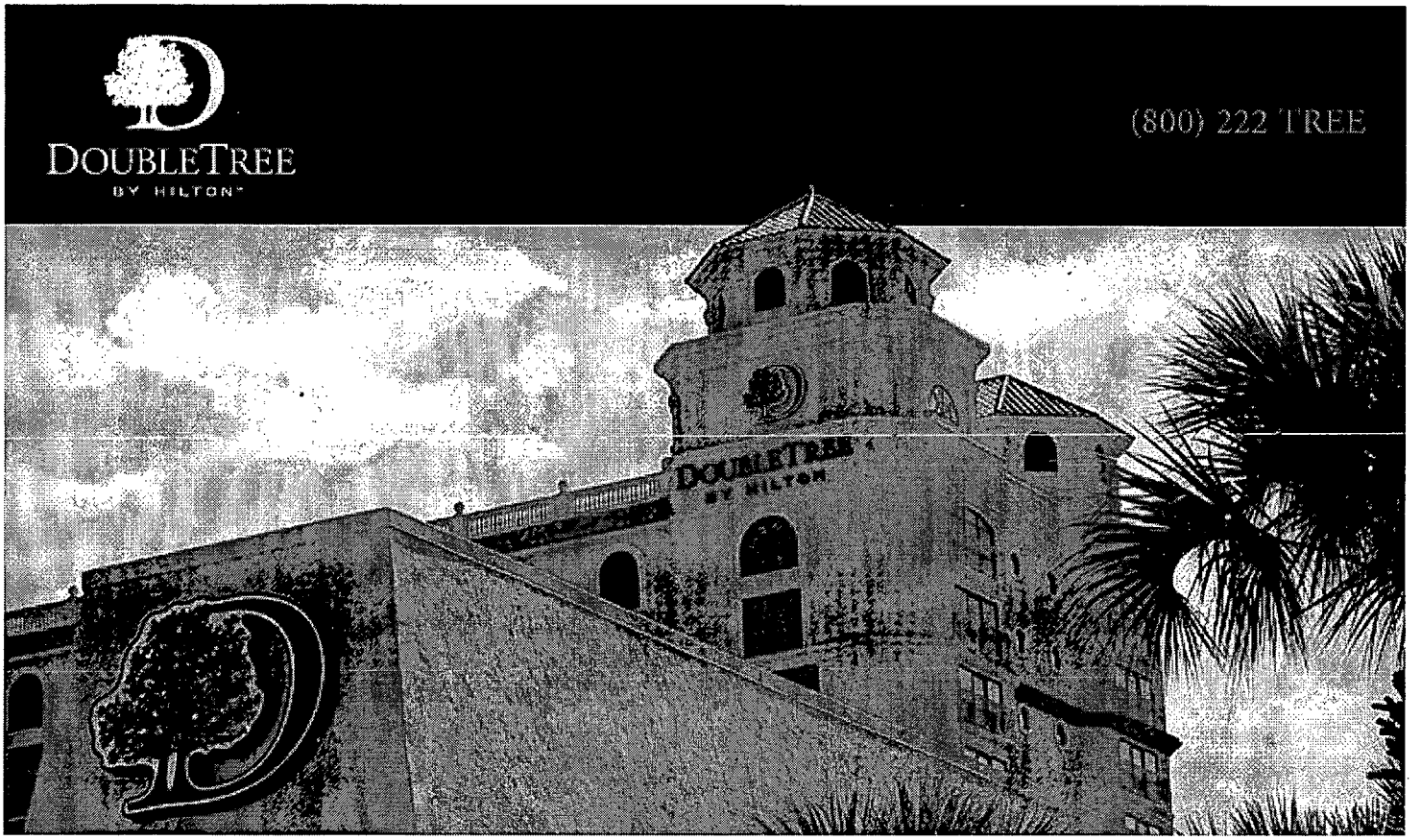
Docket Number	PROJ0689
Document Date	03/15/2011
Author Name	Butler J C
Author Affiliation	Nuclear Energy Institute (NEI)
Addressee Name	Bladey C K
Addressee Affiliation	NRC/ADM/DAS/RDEB
Document Type	General FR Notice Comment Letter
Availability	Publicly Available
Date to be Released	03/25/2011
Document Sensitivity	Non-Sensitive
Comment	
Date Added	03/17/2011
Keyword	ems nxp SUNSI Review Complete

Attachment ML110760056.ADC (107 Bytes) cannot be converted to PDF format.

Owen, Lacy

From: DoubleTree by Hilton [doubletreeemail@h1.hilton.com]
Sent: Thursday, March 17, 2011 12:44 PM
To: Collins, Elmo
Subject: Our new look has arrived.

Trouble viewing? | How to add us to your address book. Welcome to our new look.



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Where the smallest details make the biggest difference

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SEE WHERE YOU CAN FIND OUR NEW LOOK

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From: Grobe, Jack
To: Jenkins, Barbara; Cohen, Shari
Cc: Nguyen, Quynh
Subject: Re: Upcoming Trip Overseas for Jack Grobe
Date: Thursday, March 17, 2011 12:54:39 PM

Bbry works fine in Vienna. I wanted as well a computer with wireless capabilities. Can that be my laptop with a wireless card that is currently docked on my desk or does it have to be a laoner from OIS?
Jack Grobe, Deputy Director, NRR

From: Jenkins, Barbara
To: Cohen, Shari
Cc: Grobe, Jack; Nguyen, Quynh
Sent: Thu Mar 17 11:13:04 2011
Subject: RE: Upcoming Trip Overseas for Jack Grobe

Very good!

When I return to the office on Tuesday, I will follow up with you on all counts. We still have sufficient time to take care of everything, so everything will work out.

Have a great weekend!

From: Cohen, Shari
Sent: Thursday, March 17, 2011 10:44 AM
To: Jenkins, Barbara
Cc: Grobe, Jack; Nguyen, Quynh
Subject: RE: Upcoming Trip Overseas for Jack Grobe

Barbara – as always, you are the bomb! Thank you so very much! He has a thumb drive but needs a lesson on how to use it – can you help him with that? He was scheduled to have Michael Lee assist him but with all that is going on in Japan, we had to cancel the tutorial session. Jack is working odd hours at the Ops Center now and when things clear up a little we will look to you for your further, and always outstanding, assistance. I believe, but will need verification on this, that Jack's BB is set up for international service already. With appreciation, Shari

Shari Cohen, Contract Secretary
Office of Nuclear Reactor Regulation, USNRC
Room – O-13H18 / Mail Stop - O13H16M
Phone – 301-415-1270
Fax - 301 - 415-8333
Email - shari.cohen@nrc.gov

From: Jenkins, Barbara
Sent: Thursday, March 17, 2011 10:25 AM
To: Cohen, Shari
Cc: Nguyen, Quynh; Champion, Bryan
Subject: RE: Upcoming Trip Overseas for Jack Grobe

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I'm in the process of requesting the loaner international laptop for Mr. Grobe. The request date will be March 30th. I also need to mention that he will not be able to load anything on the laptop, so he may need to use one of the 4GB MXI secure thumb drives. If he does not have one of the 4GB MXI secure thumb drives, let me know, and I'll request one for him. That will take approximately 2 days for them to get the thumb drive to Mr. Grobe.

The request for the loaner international laptop will be in his name. When the international laptop is ready for his pick-up, the CSC will contact him via email when it's ready. The process can take anywhere from 10 minutes to 20 minutes for them to get the laptop set up (in his presence, and he'll need to log on at that time).

I know that he also has a BlackBerry. We may need to request international capability for him from April 1st through April 15th. Can you confirm that as well. We can process the requests early next week. They state that they need approximately 5 – 7 days notice for the international capability for a BlackBerry.

If you think of anything else which he may need (perhaps the international power source), please let me know, and I can request that from the Administrative Services Center.

From: Cohen, Shari
Sent: Wednesday, March 16, 2011 8:22 AM
To: Jenkins, Barbara
Cc: Nguyen, Quynh
Subject: RE: Upcoming Trip Overseas for Jack Grobe

Yes, let's get Jack that loaner lap top a few days earlier so he can test and load or do whatever he needs to get comfortable with it. He is leaving on April 1 and returning April 15. The only place he will need the lap top is in Austria where the Convention on Nuclear Safety (CNS) meetings will be conducted. Thank you!

Shari Cohen, Contract Secretary
Office of Nuclear Reactor Regulation, USNRC
Room – O-13H18 / Mail Stop - O13H16M
Phone – 301-415-1270
Fax - 301 - 415-8333
Email - shari.cohen@nrc.gov

From: Jenkins, Barbara
Sent: Wednesday, March 16, 2011 7:06 AM
To: Cohen, Shari
Cc: Champion, Bryan
Subject: Upcoming Trip Overseas for Jack Grobe

Good morning, Shari.

I'll be leaving for training at the PDC in a few minutes and wanted to get this to you before I left.

Mr. Grobe will need an "International" laptop for his trip. Can you provide the following information so that I can process when I return from training:

Departure time
Return time
Which country(ies) he will be going to

If he would like to have the international laptop a day or two earlier, please let me know that as well and I'll make the arrangements. The OIS L3 Contractors will need Mr. Grobe to come to their location (T5C10) so that they can "initialize" the international for him. The process can take as long as 20 minutes (if there are no problems). Their hours of operation are from 8am until 4pm daily.

If there is anything else which he may need, please let me know.

For example: "international capability" for his BlackBerry or anything else he may need.

I'll check in with you when I return this afternoon.

From: Homeland Security Outlook
To: Virgilio, Martin
Subject: Hotels Announced for International Crisis & Risk Communication Conference May 10-11
Date: Thursday, March 17, 2011 12:58:27 PM

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Topic: "Crisis Communication and the Financial Crisis"

John P. "Pat" Philbin, Ph.D., APR
President & CEO, Strategic Collaborative Solutions, LLC, Former Director, Office of External Affairs, FEMA

Brian Andrews
Director, News in English, NTN 24, RCN Television

Jay Alan
Deputy Director, Communications, Governor's Office of Homeland Security, State of California

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700 Princess Street, Suite 202, Alexandria, VA 22314

From: Wach, Lisa
To: RES Distribution
Subject: Free food in 3rd floor kitchen, help yourself!
Date: Thursday, March 17, 2011 1:07:46 PM

AG/139

From: Zabel, Joseph
To: Betancourt, Luis
Subject: RE: TECH EDIT - NUREG-I/A and Foreword
Date: Thursday, March 17, 2011 1:16:00 PM

Luis:

You can send me the one-page foreword.

Joe

From: Betancourt, Luis
Sent: Thursday, March 17, 2011 1:11 PM
To: Zabel, Joseph
Subject: RE: TECH EDIT - NUREG-I/A and Foreword

Perfect no problem. What about the foreword?

LUIS BETANCOURT DIGITAL I&C ENGINEER (EIT)
RES/DE/DICB | 301-251-7409 | MS C-2A07M | Luis.Betancourt@nrc.gov
U.S. Nuclear Regulatory Commission

From: Zabel, Joseph
Sent: Thursday, March 17, 2011 1:06 PM
To: Betancourt, Luis
Subject: RE: TECH EDIT - NUREG-I/A and Foreword

Hi Luis:

You might want to send your NUREG to QTE Resources for edit as I have a full plate for the next week or so. QTE usually does the editing of most NUREGs and Reg Guides.

Joe

Joe Zabel
Senior Program Analyst/Technical Editor
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
PMDA/Document Control Branch
joseph.zabel@nrc.gov
06D05

From: Betancourt, Luis
Sent: Thursday, March 17, 2011 11:05 AM
To: Zabel, Joseph
Subject: TECH EDIT - NUREG-I/A and Foreword

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Hi Joe,

Next week I'm planning to send you for tech edit a 44 page NUREG-I/A and a one page foreword for your review. I'll be first sending you the one page foreword possibly on Monday. How is your schedule in the next coming days so I can plan ahead?

Let me know if you have any questions.

Thanks,

Luis D. Betancourt, EIT
Digital I&C Engineer
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Digital Instrumentation and Control Branch
21 Church Street, Rockville MD, 20850, USA
C-2A07M
301-251-7409
301-251-7422
Luis.Betancourt@nrc.gov
"We are what we believe we are" - C.S. Lewis

From:	Ellmers, Glenn
To:	Ellmers, Glenn; Ash, Darren; Boger, Bruce; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Milton; Burns, Stephen; Carpenter, Cynthia; Casto, Chuck; Cohen, Miriam; Collins, Elmo; Dapas, Marc; Dean, Bill; Doane, Margaret; Droggitis, Spiros; Dyer, Jim; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hayden, Elizabeth; Holahan, Gary; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; Mamish, Nader; McCrary, Cheryl; McCree, Victor; Miller, Charles; Moore, Scott; Pederson, Cynthia; Plisco, Loren; Poole, Brooke; Powell, Amy; Reyes, Luis; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Sheron, Brian; Stewart, Sharon; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Williams, Barbara; Zimmerman, Roy; Campbell, Andy; Holahan, Patricia; Dorman, Dan; Muessle, Mary; Wert, Leonard; Tracy, Glenn; Taylor, Renee; Krupnick, David; Evans, Michele
Cc:	Akstulewicz, Brenda; Andersen, James; Bellosi, Susan; Belmore, Nancy; Boyd, Lena; Buckley, Patricia; Casby, Marcia; Cianci, Sandra; Crawford, Carrie; Flory, Shirley; Garland, Stephanie; Higginbotham, Tina; Hudson, Sharon; Landau, Mindy; Matakas, Gina; Miles, Patricia; Pulley, Deborah; Rihm, Roger; Riner, Janet; Ronewicz, Lynn; Ross, Robin; Salus, Amy; Tannenbaum, Anita; Taylor, Renee; Thomas, Loretta; Walker, Dwight; Warner, MaryAnn; Wright, Darlene; Wyatt, Melissa; Cannady, Ashley; Lockhart, Denise; Perez-Ortiz, Aracelis; Riddick, Nicole; King, Shannon; Penny, Melissa; Sprogeris, Patricia; Banks, Eleasah; Nagel, Cheri; Hasan, Nasreen; Call, Michel; Thaggard, Mark; Young, Gary; Holonich, Joseph; Jaigobind, Avinash; Brown, Theron; Moore, Mary; Daniels, Stanley; Kreuter, Jane; Schumann, Stacy; Rihm, Roger
Subject:	POSTPONED - Monthly Management Meeting - NOTE CHANGE IN DATE, TIME, LOCATION
Date:	Thursday, March 17, 2011 1:18:18 PM
Importance:	High

Due to the events occurring this week, tomorrow's Monthly Management Meeting is being postponed to next Friday. It will take place just prior to the ERB meeting, from 9:00 to 10:00, in the OEDO conference room, 017B4. As of now, we have on the agenda:

Jun Lee, launch of new public website
Eric Leeds, RIC report
OGC, FOIA update
Miriam Cohen, Federal Employee Viewpoint Survey

Let me know if you have any other items to add.

From: Ellmers, Glenn
Sent: Friday, March 04, 2011 10:20 AM
To: Ellmers, Glenn; Ash, Darren; Boger, Bruce; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Milton; Burns, Stephen; Carpenter, Cynthia; Casto, Chuck; Cohen, Miriam; Collins, Elmo; Dapas, Marc; Dean, Bill; Doane, Margaret; Droggitis, Spiros; Dyer, Jim; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hayden, Elizabeth; Holahan, Gary; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; Mamish, Nader; McCrary, Cheryl; McCree, Victor; Miller, Charles; Moore, Scott; Pederson, Cynthia; Plisco, Loren; Poole, Brooke; Powell, Amy; Reyes, Luis; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Sheron, Brian; Stewart, Sharon; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Williams, Barbara; Zimmerman, Roy; Campbell, Andy; Holahan, Patricia; Dorman, Dan; Muessle, Mary; Wert, Leonard; Tracy, Glenn; Taylor, Renee; Krupnick, David; Evans, Michele
Cc: Akstulewicz, Brenda; Andersen, James; Bellosi, Susan; Belmore, Nancy; Boyd, Lena; Buckley, Patricia; Casby, Marcia; Cianci, Sandra; Crawford, Carrie; Flory, Shirley; Garland, Stephanie; Higginbotham, Tina; Hudson, Sharon; Landau, Mindy; Matakas, Gina; Miles, Patricia; Pulley, Deborah; Rihm, Roger; Riner, Janet; Ronewicz, Lynn; Ross, Robin; Salus, Amy; Tannenbaum, Anita; Taylor, Renee; Thomas, Loretta; Walker, Dwight; Warner, MaryAnn; Wright, Darlene; Wyatt, Melissa; Cannady, Ashley; Lockhart, Denise; Perez-Ortiz, Aracelis; Riddick, Nicole; King, Shannon; Penny, Melissa; Sprogeris, Patricia; Burroughs, Eleasah; Nagel, Cheri; Hasan, Nasreen; Call, Michel; Thaggard, Mark; Young, Gary; Holonich, Joseph; Jaigobind, Avinash; Brown, Theron; Moore, Mary; Daniels, Stanley; Kreuter, Jane; 'Stacy.Schumann@nrc.gov'; Rihm, Roger
Subject: Monthly Management Meeting - Soliciation for Topics

The next EDO Monthly Management Meeting is scheduled for Friday, March, 18, 2011 from 10:00 - 11:30 a.m. EST in T2B1 (Regions by VTC).

Please send me any discussion topics you would like to suggest, along with who you

expect would lead the discussion, by COB Wednesday, March 9. (I already have Jun Lee on the agenda to discuss the public website.)

Send all materials for the meeting to me (with a cc: to Melissa Wyatt and Roger Rihm) by COB Wednesday, March 16, so we can post them to the SharePoint site.

As always, let me know if you have any questions,

Glenn

From: fedhrconferences@lrp.com
To: Ruland, William
Subject: Event begins April 4 -- register today
Date: Thursday, March 17, 2011 1:19:30 PM

HR & EEO in the Federal Workplace Conference

Register **Agenda** **Who Should Attend** **Location & Hotel**

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So much in federal civil service is changing . . . hiring reform, telework policies, the ADA Amendments Act, the rise of social media in the workplace. At April's **HR & EEO in the Federal Workplace Conference**, you'll hear directly from experts who will share their knowledge and insights on all these changes — and more.

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Straight From a Chief AJ: Best Practices in Administrative Hearings
EEOC Chief AJ Dwight Lewis will spotlight avoidable mistakes and best practices to guide your agency through hearings.

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Learn strategies to add depth to your existing programs and for developing programs that will have a lasting impact.

Are You Smarter Than an AJ?
A fun-filled session pitting audience teams against each other in answering thorny EEO questions!

Plus these additional EEO sessions:

- **Providing Effective Accommodations for Employees With Disabilities**
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- **EEO Case Law Update**
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Full-day, add-on session with Gary Gilbert and Ernest Hadley that meets EEOC annual training requirements!
Add this session to your full conference registration for only an additional $50. Or, attend just the training for $350. **Click here for details.**

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From:	Rini, Brett
To:	Rivera-Lugo, Richard
Cc:	Dion, Jeanne; Case, Michael
Subject:	FW: ACTION: OGC request for all Yucca Mt documents
Date:	Thursday, March 17, 2011 1:28:04 PM
Attachments:	ML110740769.pdf ACTION G20110183 - Due Today.msg
Importance:	High

Richie,

I would imagine any work that DE did in support of Yucca would be in CIB or CMB.

Brett

From: Dion, Jeanne
Sent: Thursday, March 17, 2011 1:18 PM
To: Rivera-Lugo, Richard; Ibarra, Jose; Armstrong, Kenneth
Cc: Gibson, Kathy; Case, Michael; Coyne, Kevin; Rini, Brett; Sheron, Brian; Uhle, Jennifer; Dempsey, Heather
Subject: ACTION: OGC request for all Yucca Mt documents
Importance: High

Everyone,
I apologize for the quick turnaround for this. The House of Representatives Committee on Oversight and Government Reform has requested all records and information related to Yucca High-level waste repository. See the Attached announcement and ticket.

ACTION
Divisions: Respond to me ASAP **today 3/17** with the approximate number of projects that supported Yucca Mountain.

I don't need all the details yet- I do need to respond to OGC with an approximate date we can produce the documents.

Call me if you any questions

Thanks,

Jeanne Dion
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Jeanne.dion@nrc.gov
301-251-7482

AG/143

UNITED STATES
NUCLEAR REGULATORY COMMISSION

Yellow Announcement: YA-11-0033

Date: March 15, 2011

TO: **All NRC Employees**

SUBJECT: **DOCUMENT HOLD INSTRUCTIONS RE: YUCCA HIGH LEVEL WASTE REPOSITORY**

The House of Representatives Committee on Oversight and Government Reform has requested documents and information related to the Yucca High-Level Waste Repository matter. NRC employees are directed to maintain all pertinent documents falling within the scope of the request, which is described below. Requested records, documents, data, or information should not be destroyed, modified, removed, transferred or otherwise made inaccessible. The request includes documents or information in your possession or control or held by employees or agents acting on your behalf. The request includes electronically stored information (ESI) which is the preferred format, as well as hard copies of documents.

What You Need to Do

It is your responsibility to ensure that any potentially relevant information related to this matter/case that is within your possession, custody, or control, is preserved and not destroyed, even if the policy or practice of your office would normally dictate otherwise.

What Must Be Preserved

The information that must be preserved includes Electronically Stored Information ("ESI"), hard copies of documents, and tangible things. ESI includes, but is not limited to, computer files of any type (word processing documents, e-mail messages, spreadsheets, calendar entries, and flash memory media, including USB drives and memory cards). It includes not only information stored on NRC computers but can also include information stored on home computers, personal laptop computers, PDAs such as Palm Pilots and Blackberries, and mobile phones, if used for NRC work.

All information, including privileged information, must be preserved.

If you identify responsive documents, you will receive additional instructions for producing this information for provision to the Committee. In the meantime, please carefully review this e-mail and preserve all materials in accordance with these instructions.

Thank you in advance for your cooperation in this matter. If you have any questions regarding which materials should be preserved or how they should be preserved, or suggestions, please do not hesitate to contact Patricia Hirsch, Assistant General Counsel for Legal Counsel, Legislation and Special Projects at 301-415-1607 or by e-mail.

RECORDS and INFORMATION REQUESTED:

1. A timeline of significant events related to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application,
   Including, but not limited to the following:
   a) Filing of each Commissioner's vote
   b) Withdrawal of any Commissioner's vote
   c) Active deliberation or discussions between Commissioners or their staffs.

2. Documents and communications, including e-mails, relating to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application.

3. Documents and communications, including e-mails, relating to reasons for the delay between the filing of the final Commissioner's vote and the scheduling of the affirmation session.

4. A timeline of all significant events related to the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources under the Continuing Resolution, including but not limited to the following:
   a) Communication to or among the Commissioners or their respective staffs
   b) Internal communication to NRC staff

5. Documents and communications, including e-mails, relating to all significant dates concerning the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources under the Continuing Resolution.

6. Documents and communications, including e-mails, exchanged among or originated by the Commissioners, their respective staffs, and the Commission staff relating to the funding of the High-Level Waste Program in FY2011. This request includes any reviews or recommendations provided by the Office of the General Counsel.

7. Documents and communications including e-mails exchanged among or originated by the Commissioners, their respective staffs, and Commission staff relating to the release of Volume III of the SER.

8. A statement by each individual responsible for reviewing and signing Volume III of the SER specifying whether he/she received the document for final concurrence and whether and when he/she gave that concurrence.

9. Documents and communications, including e-mails, related to the decision to develop a report separate from the SER to document the NRC staff's technical review activities completed to date.

10. Volume III of the SER, in un-redacted form.

/RA/

Stephen G. Burns
General Counsel

DISTRIBUTION:

ADAMS ACCESSION NUMBER: ML110740769
Document Name: G:\GC\Burns\Yellow Announcements\2011-YA – HLW.doc

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NAME	P. Hirsch	T. Rothschild	S. Burns */RA/*		
DATE	3/ /11	3/ /11	3/15/11		

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Attachment NRC_7.joboptions (13738 Bytes) cannot be converted to PDF format.

Attachment ACTION G20110183 - Due Today_1.msg (2560 Bytes) cannot be converted to PDF format.

From: etravelservices@carlson.com
To: Grobe, Jack
Subject: E2 User Account Unlocked
Date: Thursday, March 17, 2011 1:31:39 PM

Dear JOHN GROBE,

This email is to notify you that your E2 Solutions account has been unlocked.

If you have any questions, please contact your Agency System Administrator. Policy prohibits E2Solutions Customer Support from assisting with login or password related issues.

Thank you for using E2Solutions

Please note: Replies to this mailbox are not monitored.

For security reasons, the E2Solutions Customer Support Center is unable to assist with password and user ID-related questions, or reactivate or initialize your login. Please select Login Help and use the self-service links listed to reset your PASSWORD or retrieve your USERNAME.

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Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 1:33 PM
To: Kokajko, Lawrence
Cc: Perkins, Richard
Subject: Response to voicemail message on Pre-GI-009 panel

Lawrence,

The email yesterday requesting approval for Keith Compton to serve on the Pre-GI-009 screening panel is the same activity that Christiana Lui discussed with you a few months ago. Preparation of the screening analysis has required more time than we anticipated but we now have a completed report and are ready to begin the screening panel activities.

The scope of the screening panel work has not changed. We anticipate something between 5 and 25 hours of time from each panel member over the next 4 to 8 weeks.

Regards,
Ben Beasley

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From: Dorsey, Cynthia
To: Grobe, Jack
Subject: unlocked
Date: Thursday, March 17, 2011 1:33:43 PM

Your e-Travel account has been unlocked

Cynthia D. Dorsey
Budget Assistant
NRR/PMDA/BFEB
301-415-2135
OWFN - O-13F14

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From: Homeland Security NewsWire
To: Leeds, Eric
Subject: Transportation Security: Trusted Traveler coming back | Air cargo screening lagging | Wings and a prayer
Date: Thursday, March 17, 2011 1:36:39 PM

Having trouble viewing this email? Click here

Homeland Security News Wire

Sponsored by ISC West 2011 International Security Conference & Exposition, April 5-8, Las Vegas – Register Today!

Vol. 5, Thursday, 17 March 2011

Trusted Traveler program may come back
A report, commissioned by the U.S. Travel Association and released Wednesday, calls on airlines to allow passengers to check one bag free of charge and urges the creation of a voluntary "trusted traveler" program that partially resembles a mandatory one previously proposed by President George W. Bush -- and canceled by Congress; Napolitano touts the "airport checkpoint of tomorrow"
Read more

Screening and health
The health effects of airport security scanners
The Transportation Security Administration (TSA) has begun to use whole-body imaging scanners as a primary screening measure on travelers passing through airport security checkpoints; one type of scanner employs millimeter wave technology, which delivers no ionizing radiation; the second type of scanner currently deployed at airports, however, uses backscatter X-rays that expose the individual being screened to very low levels of ionizing radiation; what are the health implications of these scanners? Two prominent radiologists offer answers
Read more

Trucking
Monitoring Mexican trucks operating in the U.S.
The U.S. plan to equip Mexican trucks with electronic recorders for driver logs would be a limited, temporary program undertaken because it is the only way the Federal Motor Carrier Safety Administration (FCMSA) can ensure that the Mexican trucks will be monitored, the U.S. government says; under (NAFTA), the United States cannot require Mexican carriers to do anything that U.S. carriers are not required to do, but the government still must provide a way to monitor Mexican carriers for compliance with both the hours of service rules and the cabotage rules that restrict freight hauling between points in the United States
Read more

Air cargo
Air cargo screening lagging
The Government Accountability Office says the U.S. Transportation Security Administration (TSA) is still contending with issues reported last June that could affect the agency's ability to meet an end-of-year deadline for screening all international cargo on passenger aircraft
Read more

Wings and a prayer
Alaska Airlines sorry for detaining passengers over tefillin
Alaska Airlines flight attendants, concerned by the prayers of three Orthodox Jews being said aloud in Hebrew and the unfamiliar tefillin -- the boxes with leather straps hanging from them, which orthodox Jews wear when praying -- locked down the cockpit and radioed a security alert ahead to Los Angeles International Airport
Read more

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Forward email

From: Rulemaker
To: Borchardt, Bill
Subject: Rules Published in the Federal Register on March 17, 2011
Date: Thursday, March 17, 2011 1:37:38 PM
Attachments: AI93-PR-76FR14748.pdf

Federal Register Notices

Attached are PDF versions of NRC rules published in today's Federal Register.

Revision of Fee Schedules; Fee Recovery for Fiscal Year 2011
10 CFR Parts 170 and 171
RIN 3150–AI93
NRC–2011–0016
Proposed rule

To find previously published NRC rulemakings go to: NRC Notices Tracking

Send questions about information in this message or about your subscription to this ListServe to: Rulemaker.Resource@nrc.gov .

To subscribe or unsubscribe send an email message to: lyris.resource@nrc.gov , without a subject, and use one of the following commands in the message portion:

subscribe adm-rulemaking (first and last name)
unsubscribe adm-rulemaking (first and last name)

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FEDERAL REGISTER

Vol. 76 Thursday,
No. 52 March 17, 2011

Part II

Nuclear Regulatory Commission

10 CFR Parts 170 and 171
Revision of Fee Schedules; Fee Recovery for Fiscal Year 2011; Proposed Rule

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 170 and 171

RIN 3150–AI93

[NRC–2011–0016]

Revision of Fee Schedules; Fee Recovery for Fiscal Year 2011

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC or the Commission) is proposing to amend the licensing, inspection, and annual fees charged to its applicants and licensees. The proposed amendments are necessary to implement the Omnibus Budget Reconciliation Act of 1990 (OBRA–90), as amended, which requires the NRC to recover through fees approximately 90 percent of its budget authority in Fiscal Year (FY) 2011, not including amounts appropriated from the Nuclear Waste Fund (NWF), amounts appropriated for Waste Incidental to Reprocessing (WIR), and amounts appropriated for generic homeland security activities. The NRC is currently operating under a Continuing Resolution (CR) set to expire on March 4, 2011. Based on the FY 2011 budget submitted to the Congress, the NRC's required fee recovery amount for the FY 2011 budget is approximately $915.3 million. After accounting for billing adjustments, the total amount to be billed as fees is approximately $915.7 million.

DATES: Submit comments on the proposed rule by April 18, 2011. Comments received after the above date will be considered if it is practical to do so, but the NRC is able to ensure consideration only for comments received on or before this date. Because OBRA–90 requires that the NRC collect the FY 2011 fees by September 30, 2011, requests for extensions of the comment period will not be granted.

ADDRESSES: Please include Docket ID NRC–2011–0016 in the subject line of your comments. For instructions on submitting comments and accessing documents related to this action, *see* Section I, "Submitting Comments and Accessing Information" in the **SUPPLEMENTARY INFORMATION** section of the document. You may submit comments by any one of the following methods.

- *Federal rulemaking Web site:* Go to *http://www.regulations.gov* and search for documents filed under Docket ID NRC–2011–0016. Address questions about NRC dockets to Carol Gallagher, *telephone:* 301–492–3668; *e-mail: Carol.Gallagher@nrc.gov.*
- *Mail comments to:* Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, *ATTN:* Rulemakings and Adjudications Staff.
- *E-mail comments to: Rulemaking.Comments@nrc.gov.* If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at 301–415–1677.
- *Hand deliver comments to:* 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 am and 4:15 pm Federal workdays. (telephone: 301–415–1677).
- *Fax comments to:* Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.

To obtain additional information on the NRC's FY 2011 budget request, commenters and others may review NUREG–1100, Volume 26, "Performance Budget: Fiscal Year 2011" (SEP 2010), which describes the NRC's budget for FY 2011, including the activities to be performed in each program. This document is available on the NRC's public Web site at *http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1100/v26.* The allocation of the budget to each fee class and fee-relief category is included in the publicly available work papers supporting this rulemaking.

FOR FURTHER INFORMATION CONTACT: Renu Suri, Office of the Chief Financial Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; *telephone:* 301–415–0161, *e-mail: Renu.Suri@NRC.gov.*

SUPPLEMENTARY INFORMATION:

I. Submitting Comments and Accessing Information

Comments submitted in writing or in electronic form will be posted on the NRC Web site *http://www.regulations.gov.* Because your comments will not be edited, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed. The NRC requests that any party soliciting or aggregating comments received from other persons for submission to the NRC inform those persons that the NRC will not edit their comments to remove any identifying or contact information, and therefore, they should not include any information in their comments that they do not want publicly disclosed.

You can access publicly available documents related to this document using the following methods:

- *NRC's Public Document Room (PDR):* The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Room O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at *http://www.nrc.gov/reading-rm/adams.html.* From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's PDR reference staff at 1–800–397–4209, 301–415–4737, or by e-mail to *PDR.Resource@nrc.gov.*
- *Federal Rulemaking Web Site:* Public comments and supporting materials related to this proposed rule can be found at *http://www.regulations.gov* by searching on Docket ID NRC–2011–0016.

II. Background

The NRC is required each year, under OBRA–90 (42 U.S.C. 2214), as amended, to recover approximately 90 percent of its budget authority, not including amounts appropriated from the NWF, amounts appropriated for WIR, and amounts appropriated for generic homeland security activities (non-fee items), through fees to NRC licensees and applicants. The NRC receives 10 percent of its budget authority (not including non-fee items) from the general fund each year to pay for the

cost of agency activities that do not provide a direct benefit to NRC licensees, such as international assistance and Agreement State activities (as defined under Section 274 of the Atomic Energy Act of 1954, as amended).

The NRC assesses two types of fees to meet the requirements of OBRA–90. First, user fees, presented in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 170 under the authority of the Independent Offices Appropriation Act of 1952 (IOAA) (31 U.S.C. 9701), recover the NRC's cost of providing special benefits to identifiable applicants and licensees. For example, the NRC assesses these fees to cover the cost of inspections, applications for new licenses and license renewals, and requests for license amendments. Second, annual fees, presented in 10 CFR Part 171 under the authority of OBRA–90, recover generic regulatory costs not otherwise recovered through 10 CFR Part 170 fees.

The NRC is currently operating under an CR for FY 2011 (Pub. L. 111–322) that is effective through March 4, 2011. This means that the FY 2011 funds currently available are similar to the NRC's funding in FY 2010. Although the NRC has not received a new appropriation for FY 2011 at the time this proposed fee rule was submitted for publication in the **Federal Register**, the NRC must proceed with this rulemaking to collect the required fee amounts by September 30, 2011. Therefore, the NRC is establishing fees in this rulemaking based on the FY 2011 NRC budget sent to the Congress in February 2010.

If the Congress enacts a different version of the NRC budget than that included in the NRC submission, the fees in the NRC's FY 2011 final fee rule will be adjusted to reflect the enacted budget. Therefore, fees in the FY 2011 final fee rule may differ from the fees in this proposed rule. The NRC will adjust the FY 2011 final fees based on the enacted version of the budget without seeking further public comment.

Under a full-year CR with funding similar to FY 2010, the NRC's total required fee recovery amount could decrease by approximately $3.1 million, as compared to the FY 2011 NRC budget submitted to Congress. Nevertheless, the NRC's exact fee recovery amount would depend on the specific provisions in such legislation. A given licensee's Part 171 annual fees under a full-year CR could be similar to or higher than the fees included in this proposed fee rule. Although, some licensees may be affected more than others based on which NRC activities are subject to budget changes. It is possible that some annual fees may increase from this proposed rule under a full-year CR, because the NRC's fee-relief surplus adjustment in this proposed rule (discussed more in Section III.B.1, Application of "Fee Relief/Surcharge" of this document), could be reduced or revert to becoming a surcharge similar to the previous year. Fees in the FY 2011 final fee rule may also change from this proposed fee rule for other reasons, such as changes in the amount expected to be received from Part 170 fees in FY 2011.

Based on the FY 2011 budget submitted to the Congress, the NRC's required fee recovery amount for the FY 2011 budget is approximately $915.3 million, which is increased by approximately $0.4 million to account for billing adjustments (i.e., expected unpaid invoices, payments for prior year invoices), resulting in a total of approximately $915.7 million to be billed as fees in FY 2011.

In accordance with OBRA–90, $26.1 million of the agency's budgeted resources for generic homeland security activities are excluded from the NRC's fee base in FY 2011. These funds cover generic activities such as rulemakings, development of guidance documents that support entire license fee classes or classes of licensees, and major information technology systems that support tracking of source materials. Under its IOAA authority, the NRC will continue to charge Part 170 fees for all licensee-specific homeland security-related services provided, including security inspections and security plan reviews.

The amount of the NRC's required fee collections is set by law, and is, therefore, outside the scope of this rulemaking. In FY 2011, the NRC's total fee recovery amount has increased by $3.1 million from FY 2010. The FY 2011 budget supports activities associated with the safe and secure operations of civilian nuclear power reactors, research and test reactors, various fuel facilities, use of nuclear materials, and storage and transportation of spent nuclear fuel. The FY 2011 budget was allocated to the fee classes that the budget activities support. The annual fees for power reactors and uranium recovery facilities decrease while fees for spent fuel storage facilities, nonpower reactors, fuel facilities, most materials users, and Department of Energy's (DOE) uranium recovery and transportation increases. Another factor affecting the amount of annual fees for each fee class is the estimated collection under Part 170, discussed in Section III, "Proposed Action," of this document.

III. Proposed Action

The NRC is proposing to amend its licensing, inspection, and annual fees to recover approximately 90 percent of its FY 2011 budget authority less the appropriations for non-fee items. The NRC's total budget authority for FY 2011 is $1,053.6 million. The non-fee items include $10 million appropriated from the NWF, $0.5 million for WIR activities, and $26.1 million for generic homeland security activities. Based on the 90 percent fee-recovery requirement, the NRC will have to recover approximately $915.3 million in FY 2011 through Part 170 licensing and inspection fees and Part 171 annual fees. The amount required by law to be recovered through fees for FY 2011 would be $3.1 million more than the amount estimated for recovery in FY 2010, an increase of less than 1 percent.

The FY 2011 fee recovery amount is increased by $0.4 million to account for billing adjustments (i.e., for FY 2011 invoices that the NRC estimates will not be paid during the fiscal year, less payments received in FY 2011 for prior year invoices). This leaves approximately $915.7 million to be billed as fees in FY 2011 through Part 170 licensing and inspection fees and Part 171 annual fees.

Table I summarizes the budget and fee recovery amounts for FY 2011. FY 2010 amounts are provided for comparison purposes. (Individual values may not sum to totals due to rounding.)

TABLE I—BUDGET AND FEE RECOVERY AMOUNTS
[Dollars in millions]

	FY 2010 final rule	FY 2011 proposed rule
Total Budget Authority	$1,066.9	$1,053.6
Less Non-Fee Items	−53.3	−36.6
Balance	$1,013.6	$1,017.0
Fee Recovery Rate for FY 2011	90%	90%
Total Amount to be Recovered for FY 2011	$912.2	$915.3
Less Part 171 Billing Adjustments:		
Unpaid Current Year Invoices (estimated)	2.1	3.0
Less Payments Received in Current Year for Previous Year Invoices (estimated)	−3.2	−2.6
Subtotal	−1.1	0.4
Amount to be Recovered Through Parts 170 and 171 Fees	$911.1	$915.7
Less Estimated Part 170 Fees	−357.3	−369.3
Part 171 Fee Collections Required	$553.8	$546.4

The NRC estimates that $369.3 million would be recovered from Part 170 fees in FY 2011. This represents an increase of approximately 1.5 percent as compared to the actual Part 170 collections of $364 million for FY 2010. The NRC derived the FY 2011 estimate of Part 170 fee collections based on the previous four quarters of billing data for each license fee class, with adjustments to account for changes in the NRC's FY 2011 budget, as appropriate. The remaining $546.4 million would be recovered through the Part 171 annual fees in FY 2011, which is an increase of less than 1 percent compared to actual Part 171 collections of $545.6 million for FY 2010.

The NRC plans to publish the final fee rule no later than June 2011. The FY 2011 final fee rule will be a "major rule" as defined by the Congressional Review Act of 1996 (5 U.S.C. 801–808). Therefore, the NRC's fee schedules for FY 2011 will become effective 60 days after publication of the final rule in the **Federal Register**. The NRC will send an invoice for the amount of the annual fee to reactor licensees, 10 CFR Part 72 licensees, major fuel cycle facilities, and other licensees with annual fees of $100,000 or more, upon publication of the FY 2011 final rule. For these licensees, payment is due on the effective date of the FY 2011 final rule. Because these licensees are billed quarterly, the payment due is the amount of the total FY 2011 annual fee, less payments made in the first three quarters of the fiscal year.

Materials licensees with annual fees of less than $100,000 are billed annually. Those materials licensees whose license anniversary date during FY 2011 falls before the effective date of the FY 2011 final rule will be billed for the annual fee during the anniversary month of the license at the FY 2010 annual fee rate. Those materials licensees whose license anniversary date falls on or after the effective date of the FY 2011 final rule will be billed for the annual fee at the FY 2011 annual fee rate during the anniversary month of the license, and payment will be due on the date of the invoice.

The NRC will send licensees a short summary of the proposed rule and information on how to access the complete proposed rule on the internet. The NRC currently does not mail the final fee rule to all licensees, but will send the final rule or the proposed rule to any licensee or other person upon specific request. To request a copy, contact the Accounts Receivable/Payable Branch, Division of the Controller, Office of the Chief Financial Officer, at 301–415–7554, or e-mail *fees.resource@nrc.gov*. In addition to publication in the **Federal Register**, both the proposed and final rules will be available on the Internet at *http://www.regulations.gov*.

The NRC, in conjunction with internal and external stakeholders, reviewed its fee policies for power reactors in anticipation of the receipt of new applications for licensing small and medium sized commercial nuclear reactors. The NRC has prepared a paper for the Commission's information in support of the Nuclear Energy Institute's position to calculate annual fees for each new licensed power reactor as a function of its licensed thermal power rating (MWt).

The NRC changed its current policy with regard to billing inspection costs. Instead of billing a licensee when the inspection is completed, the NRC will now bill the licensee for any inspection cost incurred during the quarter even if the inspection is still ongoing. Billing for incurred inspections costs began in the first quarter of FY 2011, when the NRC's new accounting system was implemented. This policy change does not require a revision to Part 170.

The NRC is proposing to amend 10 CFR Parts 170 and 171 as discussed in Sections III.A. and III.B. of this document.

A. Amendments to 10 CFR Part 170: Fees for Facilities, Materials, Import and Export Licenses, and Other Regulatory Services Under the Atomic Energy Act of 1954, as Amended

In FY 2011, the NRC is proposing to increase the hourly rate to recover the full cost of activities under Part 170, and using this rate to calculate "flat" application fees.

The NRC is proposing the following changes:

1. Hourly Rate

The NRC's hourly rate is used in assessing full cost fees for specific services provided, as well as flat fees for certain application reviews. The NRC is proposing to change the FY 2011 hourly rate to $273. This rate would be applicable to all activities for which fees are assessed under §§ 170.21 and 170.31.

The FY 2011 proposed hourly rate is higher than the hourly rate of $259 in the FY 2010 final fee rule. The increase in hourly rate is due to higher FY 2011 agency overhead budgeted resources, and a small reduction in the number of direct full-time equivalents (FTEs). In FY 2011 the NRC revised its budget structure. This new structure allows the agency to accurately identify all its direct and overhead costs. Under this new FY 2011 structure, more of the budgeted resources have been identified as overhead costs. The agency is using this information to further streamline its costs and make efficient use of all its resources. The FTEs for direct program

activities in the Reactor program decrease in FY 2011. The hourly rate calculation is described in further detail in the following paragraphs.

The NRC's hourly rate is derived by dividing the sum of recoverable budgeted resources for (1) mission direct program salaries and benefits; (2) mission indirect program support; and (3) agency corporate support and the Inspector General (IG), by mission direct FTE hours. The mission direct FTE hours are the product of the mission direct FTE times the hours per direct FTE. The only budgeted resources excluded from the hourly rate are those for contract activities related to mission direct and fee-relief activities.

In FY 2011, the NRC is proposing to use 1,371 hours per direct FTE, the same amount as FY 2010, to calculate the hourly fees. The NRC has reviewed data from its time and labor system to determine if the annual direct hours worked per direct FTE estimate requires updating for the FY 2011 fee rule. Based on this review of the most recent data available, the NRC determined that 1,371 hours is the best estimate of direct hours worked annually per direct FTE. This estimate excludes all indirect activities such as training, general administration, and leave.

Table II shows the results of the hourly rate calculation methodology. FY 2010 amounts are provided for comparison purposes. (Individual values may not sum to totals due to rounding.)

TABLE II—HOURLY RATE CALCULATION

	FY 2010 final rule	FY 2011 proposed rule
Mission Direct Program Salaries & Benefits	$343.8	$337.6
Mission Indirect Program Support	$135.6	$25.9
Agency Corporate Support, and the IG	$330.4	$473.4
Subtotal	$809.8	$836.9
Less Offsetting Receipts	−0.0	−0.0
Total Budget Included in Hourly Rate	$809.8	$836.9
Mission Direct FTEs	2,276	2,236
Professional Hourly Rate (Total Budget Included in Hourly Rate divided by Mission Direct FTE Hours)	$259	$273

As shown in Table II, dividing the FY 2011 $836.9 million budget amount included in the hourly rate by total mission direct FTE hours (2,236 FTE times 1,371 hours) results in an hourly rate of $273. The hourly rate is rounded to the nearest whole dollar.

2. "Flat" Application Fee Changes

The NRC is proposing to adjust the current flat application fees in §§ 170.21 and 170.31 to reflect the revised hourly rate of $273. These flat fees are calculated by multiplying the average professional staff hours needed to process the licensing actions by the proposed professional hourly rate for FY 2011.

Biennially, the NRC evaluates historical professional staff hours used to process a new license application for materials users fee categories subject to flat application fees. This is in accordance with the requirements of the Chief Financial Officer's Act. The NRC conducted this biennial review for the FY 2011 fee rule which also included license and amendment applications for import and export licenses.

Evaluation of the historical data in FY 2011 shows that the average number of professional staff hours required to complete licensing actions in the materials program should be increased in some fee categories and decreased in others to more accurately reflect current data for completing these licensing actions. The average number of professional staff hours needed to complete new licensing actions was last updated for the FY 2009 final fee rule. Thus, the revised proposed average professional staff hours in this fee rule reflect the changes in the NRC licensing review program that have occurred since that time.

The higher hourly rate of $273 is the main reason for the increases in the application fees. Application fees for 11 fee categories (3.G., 3.I., 3.P., 3.R.1., 3.R.2., 4.B., 7.C., 8.A., 9.C., 9.D., and 17., under § 170.31) also increase because of the results of the biennial review, which showed an increase in average time to process these types of license applications. The decrease in fees for 9 fee categories (2.C., 3.B., 3.H., 3.L., 3.M., 3.O., 5.A., 7.A., and 9.A., under § 170.31) is due to a decrease in average time to process these types of applications.

The flat application fee for fee Category 17., master materials licenses of broad scope issue to Government agencies, is being eliminated. Instead, any application received for fee Category 17. will be reviewed on a full-cost basis; i.e., staff hours required to review application times the NRC hourly rate. The regulatory effort to review a new master materials license application varies with each license application. Therefore, a full cost application fee would be equitable since the actual cost of review will be charged to the applicant.

Based on the biennial review, the following changes have been made to the fee categories for import and export licenses. The current export fee Category 15.H. is deleted because the description for the fee was incorrect and not used in export licensing. The current fee Category 15.I. is renumbered as 15.H. A new export fee Category 15.H. is established to reflect a new fee category for government-to-government consents for exports of Category 1 quantities for radioactive material listed in Appendix P to 10 CFR Part 110. The new 15.H. fee category reflects the NRC's activity related to obtaining government-to-government consents as specified in § 110.42(e)(3). In addition, fee categories 15.M. through and including 15.Q. are being eliminated since the requirement to obtain a specific license for imports of radioactive materials listed in Appendix P to 10 CFR Part 110 was eliminated as part of a 2010 rule change to 10 CFR Part 110 (July 28, 2010; 75 FR 44072).

The amounts of the materials licensing flat fees are rounded so that the fees would be convenient to the user and the effects of rounding would be minimal. Fees under $1,000 are rounded to the nearest $10, fees that are greater than $1,000 but less than $100,000 are rounded to the nearest $100, and fees that are greater than $100,000 are rounded to the nearest $1,000.

The proposed licensing flat fees are applicable for fee categories K.1. through K.5. of § 170.21, and fee categories 1.C., 1.D., 2.B., 2.C., 3.A. through 3.S., 4.B. through 9.D., 10.B.,

15.A. through 15.L., 15.R., 16, and 17 of § 170.31. Applications filed on or after the effective date of the FY 2011 final fee rule would be subject to the revised fees in the final rule.

In FY 2011, NRC will be eliminating fee Category 3.D. under byproduct materials since the agency does not expect to receive any license under the current definition of this fee category. The fee category will be reserved for future use.

3. Administrative Amendments

In § 170.11, the NRC is inserting a semicolon at the end of paragraph (a)(1)(iii)(A), inserting a semicolon and the word "and" at the end of paragraph (a)(1)(iii)(B), and removing and reserving paragraph (a)(1)(iii)(D) for ease of reading. There is no change to the NRC's fee exemption policy.

In § 170.31, the NRC is eliminating footnote 5 and renumbering footnote 6 to 5.

In summary, the NRC is proposing to make the following changes to 10 CFR Part 170:

1. Establish a revised professional hourly rate to use in assessing fees for specific services;

2. Revise the fee categories for import and export licenses. Also revise the license application fees to reflect the proposed FY 2011 hourly rate; and

3. Make certain administrative changes for purposes of improving the clarity of the rule.

B. Amendments to 10 CFR Part 171: Annual Fees for Reactor Licenses and Fuel Cycle Licenses and Materials Licenses, Including Holders of Certificates of Compliance, Registrations, and Quality Assurance Program Approvals and Government Agencies Licensed by the NRC

The NRC proposes to use its fee-relief surplus by decreasing all licensees' annual fees. This rulemaking also proposed to make changes to the number of NRC licensees and to establish rebaselined annual fees based on the FY 2011 budget submitted to the Congress. The proposed amendments are described as follows:

1. Application of Fee-Relief and Low-Level Waste (LLW) Surcharge

The NRC is proposing to use its fee-relief surplus by decreasing all licensees' annual fees, based on their percentage share of the budget. The NRC applies the 10 percent of its budget that is excluded from fee recovery under OBRA–90, as amended (fee-relief), to offset the total budget allocated for activities which do not directly benefit current NRC licensees. The budget for these fee-relief activities is totaled and then reduced by the amount of the NRC's fee-relief. Any difference between the fee-relief and the budgeted amount of these activities results in a fee-relief adjustment (increase or decrease) to all licensees' annual fees, based on their percentage share of the budget (i.e., over 80 percent is allocated to power reactors each year).

In FY 2011, the 10 percent fee-relief exceeded the total budget by $6.4 million. The FY 2011 budget for fee-relief activities is lower than FY 2010, primarily due to a decrease in budgeted resources for nonprofit educational exemptions, international activities, small entity subsidies, and grants for fellowships and scholarships. The NRC is decreasing all licensees' annual fees to use the surplus amount of $6.4 million, based on their percentage share of the fee recoverable budget authority.

This is consistent with the existing fee methodology. Any fee-relief surplus is allocated as a reduction of license fees when the NRC fee-relief amount is more than the budget for fee-relief activities. A fee-relief shortfall amount is allocated as an increase in license fee to licensees when the NRC fee-relief amount is less than the budgeted resources for fee-relief activities. In FY 2011, the power reactors class of licensees will be allocated approximately 86 percent of the fee-relief surplus based on their share of the NRC fee recoverable budget authority.

The FY 2011 budgeted resources for NRC's fee-relief activities are $95.3 million. The NRC's total fee-relief in FY 2011 is $101.7 million, leaving a $6.4 million fee-relief surplus that will reduce licensees' annual fees. These values are shown in Table III. The FY 2010 amounts are provided for comparison purposes. (Individual values may not sum to totals due to rounding.)

TABLE III—FEE–RELIEF ACTIVITIES

[Dollars in millions]

Fee-relief activities	FY 2010 budgeted costs	FY 2011 budgeted costs
1. Activities not attributable to an existing NRC licensee or class of licensee:		
a. International activities	$18.2	$15.0
b. Agreement State oversight	11.2	14.1
c. Scholarships and Fellowships	15.0	11.5
2. Activities not assessed Part 170 licensing and inspection fees or Part 171 annual fees based on existing law or Commission policy:		
a. Fee exemption for nonprofit educational institutions	17.4	13.3
b. Costs not recovered from small entities under 10 CFR 171.16(c)	6.1	5.6
c. Regulatory support to Agreement States	23.1	18.0
d. Generic decommissioning/reclamation (not related to the power reactor and spent fuel storage fee classes)	15.1	16.6
e. In situ leach rulemaking and unregistered general licensees	2.4	1.2
Total fee-relief activities	108.5	95.3
Less 10 percent of NRC's FY 2011 total budget (less non-fee items)	−101.4	−101.7
Fee-Relief Adjustment to be Allocated to All Licensees' Annual Fees	7.1	−6.4

Table IV shows how the NRC is allocating the $6.4 million fee-relief surplus adjustment to each license fee class. As explained previously, the NRC is allocating this fee-relief adjustment to each license fee class based on the percent of the budget for that fee class compared to the NRC's total budget. The fee-relief surplus adjustment is

subtracted from the required annual fee recovery from each fee class.

Separately, the NRC has continued to allocate the LLW surcharge based on the volume of LLW disposal of three classes of licenses: Operating reactors, fuel facilities, and materials users. Because LLW activities support NRC licensees, the costs of these activities are recovered through annual fees. In FY 2011, this allocation percentage was updated based on review of recent data which reflects the change in the support to the various fee classes. The allocation percentage of LLW surcharge increased for operating reactors and fuel facilities, and decreased for materials users compared to FY 2010.

Table IV also shows the allocation of the LLW surcharge activity. For FY 2011, the total budget allocated for LLW activity is $3.0 million. (Individual values may not sum to totals due to rounding.)

TABLE IV—ALLOCATION OF FEE-RELIEF ADJUSTMENT AND LLW SURCHARGE, FY 2011

[Dollars in millions]

	LLW surcharge		Fee-relief adjustment		Total
	Percent	$	Percent	$	$
Operating Power Reactors	70.0	2.1	85.9	−5.5	−3.4
Spent Fuel Storage/Reactor Decommissioning			3.7	−0.2	−0.2
Research and Test Reactors			0.2	0.0	0.0
Fuel Facilities	24.0	0.7	6.2	−0.4	0.3
Materials Users	6.0	0.2	2.8	−0.2	0.0
Transportation			0.5	0.0	0.0
Uranium Recovery			0.8	0.0	0.0
Total	100.0	3.0	100.0	−6.4	−3.3

2. Revised Annual Fees

The NRC is proposing to revise its annual fees in §§ 171.15 and 171.16 for FY 2011 to recover approximately 90 percent of the NRC's FY 2011 budget authority, after subtracting the non-fee amounts and the estimated amount to be recovered through Part 170 fees.

The Commission has determined (71 FR 30721; May 30, 2006) that the agency should proceed with a presumption in favor of rebaselining when calculating annual fees each year. Under this method, the NRC's budget is analyzed in detail, and budgeted resources are allocated to fee classes and categories of licensees. The Commission expects that most years there will be budgetary and other changes that warrant the use of the rebaselining method.

As compared with FY 2010 annual fees, the FY 2011 proposed rebaselined fees are higher for four classes of licensees (spent fuel storage and reactors in decommissioning facilities, research and test reactors, fuel facilities and transportation), and lower for one class of licensees (power reactors). Within the uranium recovery fee class, the proposed annual fees for most licensees decrease, while the proposed annual fee for one fee category increases. The annual fee increases for most fee categories in the materials users' fee class.

The NRC's total fee recoverable budget, as mandated by law, is approximately $3.1 million higher in FY 2011 as compared with FY 2010. The FY 2011 budget was allocated to the fee classes that the budgeted activities support. The increase is primarily due to the higher FY 2011 budget supporting the spent fuel storage and transportation activities, fuel facility reviews, materials user's activities, uranium recovery facilities, and research and test reactor reviews.

The factors affecting all annual fees include the distribution of budgeted costs to the different classes of licenses (based on the specific activities the NRC will perform in FY 2011), the estimated Part 170 collections for the various classes of licenses, and allocation of the fee-relief surplus adjustment to all fee classes. The percentage of the NRC's budget not subject to fee recovery remained at 10 percent from FY 2010 to FY 2011.

Table V shows the rebaselined fees for FY 2011 for a representative list of categories of licensees. The FY 2010 amounts are provided for comparison purposes. (Individual values may not sum to totals due to rounding.)

TABLE V—REBASELINED ANNUAL FEES

Class/category of licenses	FY 2010 annual fee	FY 2011 annual fee
Operating Power Reactors (Including Spent Fuel Storage/Reactor Decommissioning Annual Fee)	$4,784,000	$4,669,000
Spent Fuel Storage/Reactor Decommissioning	148,000	241,000
Research and Test Reactors (Nonpower Reactors)	81,700	86,100
High Enriched Uranium Fuel Facility	5,439,000	6,078,000
Low Enriched Uranium Fuel Facility	2,047,000	2,287,000
UF_6 Conversion Facility	1,111,000	1,242 ,000
Conventional Mills	38,300	31,900
Typical Materials Users:		
Radiographers (Category 3O)	28,200	25,700
Well Loggers (Category 5A)	11,900	9,900
Gauge Users (Category 3P)	4,500	4,800
Broad Scope Medical (Category 7B)	45,100	45,000

The work papers that support this proposed rule show in detail the allocation of NRC's budgeted resources for each class of licenses and how the fees are calculated. Beginning in FY 2011, the NRC is transitioning to a new budget structure. Therefore, the reports included in these work papers summarize the FY 2011 budgeted FTE and contract dollars allocated to each fee class and fee-relief category at the product line level. Since the FY 2010 and FY 2011 budget structures are appreciably different, the reports comparing the FY 2011 allocations to FY 2010 are at a higher summary level. The work papers are available electronically at *http://www.regulations.gov* by searching on Docket ID NRC–2011–0016 and at the NRC's Electronic Reading Room on the Internet at Web site address *http://www.nrc.gov/reading-rm/adams.html*. The work papers may also be examined at the NRC PDR located at One White Flint North, Room O–1F22, 11555 Rockville Pike, Rockville, Maryland 20852.

The budgeted costs allocated to each class of licenses and the calculations of the rebaselined fees are described in paragraphs a. through h. of this section. Individual values in the Tables presented in this section may not sum to totals due to rounding.

a. Fuel Facilities

The FY 2011 budgeted cost to be recovered in the annual fees assessment to the fuel facility class of licenses [which includes licensees in fee categories 1.A.(1)(a), 1.A.(1)(b), 1.A.(2)(a), 1.A.(2)(b), 1.A.(2)(c), 1.E., and 2.A.(1), under § 171.16] is approximately $30 million. This value is based on the full cost of budgeted resources associated with all activities that support this fee class, which is reduced by estimated Part 170 collections and adjusted for allocated generic transportation resources and fee-relief adjustment. In FY 2011, the LLW surcharge for fuel facilities is added to the allocated fee-relief adjustment (*see* Table IV in Section III.B.1., "Application of Fee-Relief and Low-Level Waste Surcharge" of this document). The summary calculations used to derive this value are presented in Table VI for FY 2011, with FY 2010 values shown for comparison. (Individual values may not sum to totals due to rounding.)

TABLE VI—ANNUAL FEE SUMMARY CALCULATIONS FOR FUEL FACILITIES

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$48.8	$55.7
Less estimated Part 170 receipts	−21.2	−26.6
Net Part 171 resources	27.6	29.1
Allocated generic transportation	+0.5	+0.6
Fee-relief adjustment/LLW surcharge	+0.7	+0.3
Billing adjustments	−0.1	−0.0
Total required annual fee recovery	28.8	30.0

The increase in total budgeted resources allocated to this fee class from FY 2010 to FY 2011 is primarily due to increased support for licensing amendments, and rulemaking for regulatory framework for reprocessing.

The total required annual fee recovery amount is allocated to the individual fuel facility licensees, based on the effort/fee determination matrix developed for the FY 1999 final fee rule (64 FR 31447; June 10, 1999). In the matrix included in the publicly available NRC work papers, licensees are grouped into categories according to their licensed activities (i.e., nuclear material enrichment, processing operations, and material form) and the level, scope, depth of coverage, and rigor of generic regulatory programmatic effort applicable to each category from a safety and safeguards perspective. This methodology can be applied to determine fees for new licensees, current licensees, licensees in unique license situations, and certificate holders.

This methodology is adaptable to changes in the number of licensees or certificate holders, licensed or certified material and/or activities, and total programmatic resources to be recovered through annual fees. When a license or certificate is modified, it may result in a change of category for a particular fuel facility licensee, as a result of the methodology used in the fuel facility effort/fee matrix. Consequently, this change may also have an effect on the fees assessed to other fuel facility licensees and certificate holders. For example, if a fuel facility licensee amends its license/certificate (*e.g.*, decommissioning or license termination) that results in it not being subject to Part 171 costs applicable to the fee class, then the budgeted costs for the safety and/or safeguards components will be spread among the remaining fuel facility licensees/certificate holders.

The methodology is applied as follows. First, a fee category is assigned, based on the nuclear material and activity authorized by license or certificate. Although a licensee/certificate holder may elect not to fully use a license/certificate, the license/certificate is still used as the source for determining authorized nuclear material possession and use/activity. Second, the category and license/certificate information are used to determine where the licensee/certificate holder fits into the matrix. The matrix depicts the categorization of licensees/certificate holders by authorized material types and use/activities.

Each year, the NRC's fuel facility project managers and regulatory analysts determine the level of effort associated with regulating each of these facilities. This is done by assigning, for each fuel facility, separate effort factors for the safety and safeguards activities associated with each type of regulatory activity. The matrix includes ten types of regulatory activities, including enrichment and scrap/waste-related activities (see the work papers for the complete list). Effort factors are assigned as follows: one (low regulatory effort), five (moderate regulatory effort), and ten (high regulatory effort). These effort factors are then totaled for each fee category, so that each fee category has a total effort factor for safety activities and a total effort factor for safeguards activities.

The effort factors for the various fuel facility fee categories are summarized in Table VII. The value of the effort factors

shown, as well as the percent of the total effort factor for all fuel facilities, reflects the total regulatory effort for each fee category (not per facility). The following factors have changed compared to FY 2010. The total effort factors for the Limited Operations fee category has increased from FY 2010, while the Uranium Enrichment fee category factors decreased from FY 2010 primarily due to a shift of one licensee from the Uranium Enrichment fee category to Limited Operations fee category.

TABLE VII—EFFORT FACTORS FOR FUEL FACILITIES, FY 2011

Facility type (fee category)	Number of facilities	Effort factors (percent of total)	
		Safety	Safeguards
High Enriched Uranium Fuel (1.A.(1)(a))	2	89 (35.5)	97 (46.4)
Low Enriched Uranium Fuel (1.A.(1)(b))	3	70 (27.9)	35 (16.7)
Limited Operations (1.A.(2)(a))	2	15 (6.0)	8 (3.8)
Gas Centrifuge Enrichment Demonstration (1.A.(2)(b))	1	3 (1.2)	15 (7.2)
Hot Cell (1.A.(2)(c))	1	6 (2.4)	3 (1.4)
Uranium Enrichment (1.E)	2	56 (22.3)	44 (21.1)
UF_6 Conversion (2.A.(1))	1	12 (4.8)	7 (3.3)

For FY 2011, the total budgeted resources for safety activities, before the fee-relief adjustment is made, are $16,216,139. This amount is allocated to each fee category based on its percent of the total regulatory effort for safety activities. For example, if the total effort factor for safety activities for all fuel facilities is 100, and the total effort factor for safety activities for a given fee category is 10, that fee category will be allocated 10 percent of the total budgeted resources for safety activities. Similarly, the budgeted resources amount of $13,502,682 for safeguards activities is allocated to each fee category based on its percent of the total regulatory effort for safeguards activities. The fuel facility fee class' portion of the fee-relief adjustment ($343,353) is allocated to each fee category based on its percent of the total regulatory effort for both safety and safeguards activities. The annual fee per licensee is then calculated by dividing the total allocated budgeted resources for the fee category by the number of licensees in that fee category. The fee (rounded) for each facility is summarized in Table VIII.

TABLE VIII—ANNUAL FEES FOR FUEL FACILITIES

Facility type (fee category)	FY 2011 proposed annual fee
High Enriched Uranium Fuel (1.A.(1)(a))	$6,078,000
Low Enriched Uranium Fuel (1.A.(1)(b))	2,287,000
Limited Operations Facility (1.A.(2)(a))	752,000
Gas Centrifuge Enrichment Demonstration (1.A.(2)(b))	1,176,000
Hot Cell (and others) (1.A.(2)(c))	588,000
Uranium Enrichment (1.E.)	3,268,000
UF_6 Conversion (2.A.(1))	1,242,000

If the NRC authorizes operation of a new uranium enrichment facility in FY 2011, the applicable fee to any type of new uranium enrichment facility is the annual fee in § 171.16, fee Category 1.E., Uranium Enrichment, unless the NRC establishes a new fee category for the facility in a subsequent rulemaking. The applicable annual fee for a facility that is authorized to operate during the FY will be prorated in accordance with the provisions of § 171.17.

b. Uranium Recovery Facilities

The total FY 2011 budgeted cost to be recovered through annual fees assessed to the uranium recovery class [which includes licensees in fee categories 2.A.(2)(a), 2.A.(2)(b), 2.A.(2)(c), 2.A.(2)(d), 2.A.(2)(e), 2.A.(3), 2.A.(4), 2.A.(5) and 18.B., under § 171.16], is approximately $1.0 million. The derivation of this value is shown in Table IX, with FY 2010 values shown for comparison purposes.

TABLE IX—ANNUAL FEE SUMMARY CALCULATIONS FOR URANIUM RECOVERY FACILITIES

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$6.69	$7.14
Less estimated Part 170 receipts	−5.83	−6.09
Net Part 171 resources	0.86	1.05
Allocated generic transportation	N/A	N/A
Fee-relief adjustment	+0.05	−0.05
Billing adjustments	−0.01	0.00

TABLE IX—ANNUAL FEE SUMMARY CALCULATIONS FOR URANIUM RECOVERY FACILITIES—Continued

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total required annual fee recovery	0.91	1.00

The increase in total budgeted resources allocated to this fee class from FY 2010 to FY 2011 is primarily due to increase in DOE Title I licensing activities partially offset by increase in Part 170 estimates. Since FY 2002, the NRC has computed the annual fee for the uranium recovery fee class by allocating the total annual fee amount for this fee class between the DOE and the other licensees in this fee class. The NRC regulates DOE's Title I and Title II activities under the Uranium Mill Tailings Radiation Control Act (UMTRCA). The Congress established the two programs, Title I and Title II under UMTRCA, to protect the public and the environment from uranium milling. The UMTRCA Title I program is for remedial action at abandoned mill tailings sites where tailings resulted largely from production of uranium for the weapons program. The NRC also regulates DOE's UMTRCA Title II program which is directed toward uranium mill sites licensed by the NRC or Agreement States in or after 1978.

The annual fee assessed to DOE includes recovery of the costs specifically budgeted for NRC's Title I activities, plus 10 percent of the remaining annual fee amount, including the fee-relief and generic/other costs, for the uranium recovery class. The remaining 90 percent of the fee-relief and generic/other costs are assessed to the other NRC licensees in this fee class that are subject to annual fees. The distribution of 10 percent of the generic budgeted costs to DOE and 90 percent to other facilities is a change from the previous year that is based on current NRC activities. Last year, the distribution was 35 percent and 65 percent to DOE and other facilities, respectively.

The costs to be recovered through annual fees assessed to the uranium recovery class are shown in Table X.

TABLE X—COSTS RECOVERED THROUGH ANNUAL FEES

Uranium recovery fee class	
DOE Annual Fee Amount (UMTRCA Title I and Title II) general licenses:	
UMTRCA Title I budgeted costs less Part 170 receipts	$745,331
10 percent of generic/other uranium recovery budgeted costs	30,984
10 percent of uranium recovery fee-relief adjustment	−4,984
Total Annual Fee Amount for DOE (rounded)	771,000
Annual Fee Amount for Other Uranium Recovery Licenses:	
90 percent of generic/other uranium recovery budgeted costs less the amounts specifically budgeted for Title I activities	278,854
90 percent of uranium recovery fee-relief adjustment	−44,857
Total Annual Fee Amount for Other Uranium Recovery Licenses	233,996

The DOE fee increases in FY 2011 compared to FY 2010 due to higher budgeted resources for UMTRCA Title I activities. The annual fee for other uranium recovery licensees decreases in FY 2011.

Although the distribution of the generic budgeted costs to other uranium facilities increased from FY 2010, the total annual fee amount to be recovered decreases in FY 2011 compared to FY 2010, primarily due to increased activities for DOE Title I facilities.

The NRC will continue to use a matrix (which is included in the supporting work papers) to determine the level of effort associated with conducting the generic regulatory actions for the different (non-DOE) licensees in this fee class. The weights derived in this matrix are used to allocate the approximately $234,000 annual fee amount to these licensees. The use of this uranium recovery annual fee matrix was established in the FY 1995 final fee rule (60 FR 32217; June 20, 1995). The FY 2011 matrix is described as follows.

First, the methodology identifies the categories of licenses included in this fee class (besides DOE). In FY 2011, these categories are conventional uranium mills and heap leach facilities, uranium solution mining and resin In Situ Recovery (ISR) facilities, mill tailings disposal facilities (11e.(2) disposal facilities), and uranium water treatment facilities.

Second, the matrix identifies the types of operating activities that support and benefit these licensees. The activities related to generic decommissioning/reclamation are not included in the matrix, because they are included in the fee-relief activities. Therefore, they are not a factor in determining annual fees. The activities included in the FY 2011 matrix are operations, waste operations, and groundwater protection. The relative weight of each type of activity is then determined, based on the regulatory resources associated with each activity. The operations, waste operations, and groundwater protection activities have weights of 0, 5, and 10, respectively, in the FY 2011 matrix.

Each year, the NRC determines the level of benefit to each licensee for generic uranium recovery program activities for each type of generic activity in the matrix. This is done by assigning, for each fee category, separate benefit factors for each type of regulatory activity in the matrix. Benefit factors are assigned on a scale of 0 to 10 as follows: Zero (no regulatory benefit), five (moderate regulatory benefit), and ten (high regulatory benefit). These benefit factors are first multiplied by the relative weight assigned to each activity (described previously). Total benefit factors by fee category, and per licensee in each fee category, are then calculated. These benefit factors thus reflect the relative regulatory benefit associated with each licensee and fee category. The NRC expects to license an ISR Resin

Facility in FY 2011. Therefore, the benefit factors for fee Category 2.A.(2)(d) have been included in the FY 2011 matrix, and an annual fee has been established.

The benefit factors per licensee and per fee category, for each of the non-DOE fee categories included in the uranium recovery fee class, are as follows:

TABLE XI—BENEFIT FACTORS FOR URANIUM RECOVERY LICENSES

Fee category	Number of licensees	Benefit factor per licensee	Total value	Benefit factor percent total
Conventional and Heap Leach mills (2.(A).2.a.)	1	200	200	14
Basic In Situ Recovery facilities (2.(A).2.b.)	4	190	760	52
Expanded In Situ Recovery facilities (2.(A).2.c.)	1	215	215	15
In Situ Recovery Resin Facilities (2.(A).2.d.)	1	180	180	12
11e.(2) disposal incidental to existing tailings sites (2.(A).4.)	1	65	65	4
Uranium water treatment (2.(A).5.)	1	45	45	3
			1,465	

Applying these factors to the approximately $234,000 in budgeted costs to be recovered from non-DOE uranium recovery licensees results in the total annual fees for each fee category. The annual fee per licensee is calculated by dividing the total allocated budgeted resources for the fee category by the number of licensees in that fee category, as summarized in Table XII:

TABLE XII—ANNUAL FEES FOR URANIUM RECOVERY LICENSEES (OTHER THAN DOE)

Facility type (fee category)	FY 2011 proposed annual fee
Conventional and Heap Leach mills (2.A.(2)(a))	31,900
Basic In Situ Recovery facilities (2.A.(2)(b))	30,300
Expanded In Situ Recovery facilities (2.A.(2)(c))	34,300
In Situ Recovery Resin facilities (2.A.(2)(d))	28,800
11e.(2) disposal incidental to existing tailings sites (2.A.(4))	10,400
Uranium water treatment (2.A.(5))	7,200

c. Operating Power Reactors

The $460.5 million in budgeted costs to be recovered through FY 2011 annual fees assessed to the power reactor class was calculated as shown in Table XIII. The FY 2010 values are shown for comparison. (Individual values may not sum to totals due to rounding.)

TABLE XIII—ANNUAL FEE SUMMARY CALCULATIONS FOR OPERATING POWER REACTORS

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$787.3	$783.1
Less estimated Part 170 receipts	−312.5	−320.5
Net Part 171 resources	474.8	462.6
Allocated generic transportation	+0.8	+0.9
Fee-relief adjustment/LLW surcharge	+7.5	−3.4
Billing adjustments	−1.0	0.4
Total required annual fee recovery	482.1	460.5

The annual fee for power reactors decreases in FY 2011 compared to FY 2010 due to a decrease in budgeted resources, increase in the Part 170 collections estimate, and the fee-relief surplus adjustment. The budgeted costs to be recovered through annual fees to power reactors are divided equally among the 104 power reactors licensed to operate. This results in an FY 2011 annual fee of $4,428,000 per reactor. Additionally, each power reactor licensed to operate would be assessed the FY 2011 spent fuel storage/reactor decommissioning annual fee of $241,000. This results in a total FY 2011 annual fee of $4,669,000 for each power reactor licensed to operate.

The annual fees for power reactors are presented in § 171.15.

d. Spent Fuel Storage/Reactors in Decommissioning

For FY 2011, budgeted costs of approximately $29.7 million for spent fuel storage/reactor decommissioning are to be recovered through annual fees assessed to 10 CFR Part 50 power reactors, and to Part 72 licensees who do not hold a Part 50 license. Those reactor licensees that have ceased operations and have no fuel onsite are not subject to these annual fees. Table

XIV shows the calculation of this annual fee amount. The FY 2010 values are shown for comparison. (Individual values may not sum to totals due to rounding.)

TABLE XIV—ANNUAL FEE SUMMARY CALCULATIONS FOR THE SPENT FUEL STORAGE/REACTOR IN DECOMMISSIONING FEE CLASS

[Dollars in millions]

Summary Fee Calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$24.1	$33.4
Less estimated Part 170 receipts	−6.4	−4.0
Net Part 171 resources	17.7	29.4
Allocated generic transportation	+0.4	+0.5
Fee-relief adjustment	+0.2	−0.2
Billing adjustments	0.0	0.0
Total required annual fee recovery	18.2	29.7

The value of total budgeted resources for this fee class is higher in FY 2011 than in FY 2010, due to increased budgeted resources for spent fuel storage licensing and certification activities and lower Part 170 collections estimate, partially offset by the fee-relief surplus adjustment. The required annual fee recovery amount is divided equally among 123 licensees, resulting in an FY 2011 annual fee of $241,000 per licensee.

e. Research and Test Reactors (Nonpower Reactors)

Approximately $340,000 in budgeted costs is to be recovered through annual fees assessed to the research and test reactor class of licenses for FY 2011. Table XV summarizes the annual fee calculation for research and test reactors for FY 2011. The FY 2010 values are shown for comparison. (Individual values may not sum to totals due to rounding.)

TABLE XV—ANNUAL FEE SUMMARY CALCULATIONS FOR RESEARCH AND TEST REACTORS

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$1.31	$1.87
Less estimated Part 170 receipts	−1.01	−1.54
Net Part 171 resources	0.30	0.33
Allocated generic transportation	+0.01	+0.02
Fee-relief adjustment	+0.01	−0.01
Billing adjustments	0.00	0.00
Total required annual fee recovery	0.33	0.34

The increase in annual fees from FY 2010 to FY 2011 is primarily due to increase in budgeted costs for review of licensing amendments partially offset by the fee-relief surplus adjustment. The required annual fee recovery amount is divided equally among the four research and test reactors subject to annual fees and results in an FY 2011 annual fee of $86,100 for each licensee.

f. Rare Earth Facilities

The agency does not anticipate receiving an application for a rare earth facility this fiscal year, so no budgeted resources are allocated to this fee class, and no annual fee will be published in FY 2011.

g. Materials Users

Table XVI shows the calculation of the FY 2011 annual fee amount for materials users licensees. The FY 2010 values are shown for comparison. Note the following fee categories under § 171.16 are included in this fee class: 1.C., 1.D., 2.B., 2.C., 3.A. through 3.S., 4.A. through 4.C., 5.A., 5.B., 6.A., 7.A. through 7.C., 8.A., 9.A. through 9.D., 16, and 17. (Individual values may not sum to totals due to rounding.)

TABLE XVI—ANNUAL FEE SUMMARY CALCULATIONS FOR MATERIALS USERS

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$28.8	$30.0
Less estimated Part 170 receipts	−1.8	−1.6
Net Part 171 resources	27.0	28.4

TABLE XVI—ANNUAL FEE SUMMARY CALCULATIONS FOR MATERIALS USERS—Continued

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Allocated generic transportation	+0.8	+1.0
Fee-relief adjustment/LLW surcharge	+0.9	−0.0
Billing adjustments	−0.0	−0.0
Total required annual fee recovery	28.7	29.4

The total required annual fees to be recovered from materials licensees increase in FY 2011, mainly because of increases in the budgeted resources allocated to this fee class for licensing and oversight activities, and lower estimated Part 170 fee revenue compared to FY 2010. Annual fees for most fee categories within the materials users' fee class increase while some decrease due to decrease in inspection costs in certain fee categories.

To equitably and fairly allocate the $29.4 million in FY 2011 budgeted costs to be recovered in annual fees assessed to the approximately 3,000 diverse materials users licensees, the NRC will continue to base the annual fees for each fee category within this class on the Part 170 application fees and estimated inspection costs for each fee category. Because the application fees and inspection costs are indicative of the complexity of the license, this approach continues to provide a proxy for allocating the generic and other regulatory costs to the diverse categories of licenses based on the NRC's cost to regulate each category. This fee calculation also continues to consider the inspection frequency (priority), which is indicative of the safety risk and resulting regulatory costs associated with the categories of licenses.

The annual fee for these categories of materials users licenses is developed as follows:

Annual fee = Constant × [Application Fee + (Average Inspection Cost divided by Inspection Priority)] + Inspection Multiplier × (Average Inspection Cost divided by Inspection Priority) + Unique Category Costs.

The constant is the multiple necessary to recover approximately $21 million in general costs (including allocated generic transportation costs) and is 1.53 for FY 2011. The average inspection cost is the average inspection hours for each fee category multiplied by the hourly rate of $273. The inspection priority is the interval between routine inspections, expressed in years. The inspection multiplier is the multiple necessary to recover approximately $8.2 million in inspection costs, and is 2.3 for FY 2011. The unique category costs are any special costs that the NRC has budgeted for a specific category of licenses. For FY 2011, approximately $113,500 in budgeted costs for the implementation of revised 10 CFR Part 35, Medical Use of Byproduct Material (unique costs), has been allocated to holders of NRC human-use licenses.

The annual fee to be assessed to each licensee also includes a share of the fee-relief surplus adjustment of approximately $177,000 allocated to the materials users fee class (see Section III.B.1., "Application of Fee-Relief and Low-Level Waste Surcharge," of this document), and for certain categories of these licensees, a share of the approximately $189,000 in LLW surcharge costs allocated to the fee class. The annual fee for each fee category is shown in § 171.16(d).

In FY 2011, the NRC will be eliminating fee Category 3.D. under byproduct materials since the agency does not expect to receive any license under the current definition of this fee category. The fee category will be reserved for future use.

h. Transportation

Table XVII shows the calculation of the FY 2011 generic transportation budgeted resources to be recovered through annual fees. The FY 2010 values are shown for comparison. (Individual values may not sum to totals due to rounding.)

TABLE XVII—ANNUAL FEE SUMMARY CALCULATIONS FOR TRANSPORTATION

[Dollars in millions]

Summary fee calculations	FY 2010 final	FY 2011 proposed
Total budgeted resources	$6.6	$7.5
Less estimated Part 170 receipts	−3.3	−3.4
Net Part 171 resources	3.3	4.1

The increase in Part 171 resources in FY 2011 compared to last year is primarily due to an increase in budgeted resources for transportation regulatory programs.

The NRC must approve any package used for shipping nuclear material before shipment. If the package meets NRC requirements, the NRC issues a Radioactive Material Package Certificate of Compliance (CoC) to the organization requesting approval of a package. Organizations are authorized to ship radioactive material in a package approved for use under the general licensing provisions of 10 CFR Part 71. The resources associated with generic transportation activities are distributed to the license fee classes based on the number of CoCs benefitting (used by) that fee class, as a proxy for the generic transportation resources expended for each fee class.

Generic transportation resources associated with fee-exempt entities are not included in this total. These costs are included in the appropriate fee-relief category (e.g., the fee-relief category for nonprofit educational institutions).

Consistent with the policy established in the NRC's FY 2006 final fee rule (71 FR 30721; May 30, 2006), the NRC will

recover generic transportation costs unrelated to DOE as part of existing annual fees for license fee classes. The NRC will continue to assess a separate annual fee under § 171.16, fee Category 18.A., for DOE transportation activities. The amount of the allocated generic resources is calculated by multiplying the percentage of total CoCs used by each fee class (and DOE) by the total generic transportation resources to be recovered.

The distribution of these resources to the license fee classes and DOE is shown in Table XVIII. The distribution is adjusted to account for the licensees in each fee class that are fee-exempt. For example, if 3 CoCs benefit the entire research and test reactor class, but only 4 of 32 research and test reactors are subject to annual fees, the number of CoCs used to determine the proportion of generic transportation resources allocated to research and test reactor annual fees equals ((4/32)*3), or 0.4 CoCs.

TABLE XVIII—DISTRIBUTION OF GENERIC TRANSPORTATION RESOURCES, FY 2011

[Dollars in millions]

License fee class/DOE	Number CoCs benefiting fee class or DOE	Percentage of total CoCs	Allocated generic transportation resources
Total	85.5	100.0	$4.11
DOE	22.0	25.7	1.06
Operating Power Reactors	19.0	22.2	0.91
Spent Fuel Storage/Reactor Decommissioning	10.0	11.7	0.48
Research and Test Reactors	0.5	0.6	0.02
Fuel Facilities	13.0	15.2	0.62
Materials Users	21.0	24.6	1.01

The NRC is proposing to continue to assess an annual fee to DOE based on the Part 71 CoCs it holds and not allocate these DOE-related resources to other licensees' annual fees, because these resources specifically support DOE. Note that DOE's annual fee includes a reduction for the fee-relief surplus adjustment (see Section III.B.1, "Application of Fee-Relief and Low-Level Waste Surcharge," of this document), resulting in a total annual fee of $1,028,000 for FY 2011. The increase in the DOE fee is primarily related to higher budgeted resources for the NRC's transportation activities.

3. Administrative Amendments

Eliminate fee Category 3.D. in § 171.16 since the agency currently does not have any licensee under this category. Based on the definition of this fee category no future licensees are expected since there are no nonprofit educational institutions that are distributors of radiopharmaceuticals.

Revise § 171.16 to reflect changes made to fee categories for import and export licenses in § 170.31. The current export fee Category 15.H. is deleted because the description for the fee was incorrect and not used in export licensing. A new export fee Category 15.H. is established to reflect a new fee category for government-to-government consents for exports of Category 1 quantities for radioactive material listed in Appendix P to 10 CFR Part 110. In addition, fee categories 15.M. through and including 15.Q. are being eliminated. The requirement to obtain a specific license for imports of radioactive materials listed in Appendix P to 10 CFR Part 110 was eliminated as part of a 2010 rule change to 10 CFR Part 110 (July 28, 2010; 75 FR 44072).

In summary, the NRC is proposing to—

1. Use the NRC's fee-relief surplus by reducing all licensees' annual fees, based on their percentage share of the NRC budget; and

2. Establish rebaselined annual fees for FY 2011.

3. Update some fee categories for materials users and import and export licenses.

IV. Plain Language

The Presidential Memorandum dated June 1, 1998, entitled "Plain Language in Government Writing," directed that the Government's writing be in plain language. This memorandum was published on June 10, 1998 (63 FR 31883). The NRC requests specific comments on the clarity and effectiveness of the language in the proposed rule. Comments should be sent to the address listed under the **ADDRESSES** section of this document.

V. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 3701) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies, unless using these standards is inconsistent with applicable law or is otherwise impractical. The NRC is proposing to amend the licensing, inspection, and annual fees charged to its licensees and applicants as necessary to recover approximately 90 percent of its budget authority in FY 2011, as required by the OBRA–90, as amended. This action does not constitute the establishment of a standard that contains generally applicable requirements.

VI. Environmental Impact: Categorical Exclusion

The NRC has determined that this proposed rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(1). Therefore, neither an environmental assessment nor an environmental impact statement has been prepared for the proposed rule. By its very nature, this regulatory action does not affect the environment and, therefore, no environmental justice issues are raised.

VII. Paperwork Reduction Act Statement

This proposed rule does not contain information collection requirements and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an

information collection requirement, unless the requesting document displays a currently valid Office of Management and Budget control number.

VIII. Regulatory Analysis

With respect to 10 CFR Part 170, this proposed rule was developed under Title V of the IOAA (31 U.S.C. 9701) and the Commission's fee guidelines. When developing these guidelines, the Commission took into account guidance provided by the U.S. Supreme Court on March 4, 1974, in *National Cable Television Association, Inc.* v. *United States,* 415 U.S. 36 (1974) and *Federal Power Commission v. New England Power Company,* 415 U.S. 345 (1974). In these decisions, the Court held that the IOAA authorizes an agency to charge fees for special benefits rendered to identifiable persons measured by the "value to the recipient" of the agency service. The meaning of the IOAA was further clarified on December 16, 1976, by four decisions of the U.S. Court of Appeals for the District of Columbia: *National Cable Television Association* v. *Federal Communications Commission,* 554 F.2d 1094 (DC Cir. 1976); *National Association of Broadcasters* v. *Federal Communications Commission,* 554 F.2d 1118 (DC Cir. 1976); *Electronic Industries Association* v. *Federal Communications Commission,* 554 F.2d 1109 (D.C. Cir. 1976); and *Capital Cities Communication, Inc.* v. *Federal Communications Commission,* 554 F.2d 1135 (DC Cir. 1976). The Commission's fee guidelines were developed based on these legal decisions.

The Commission's fee guidelines were upheld on August 24, 1979, by the U.S. Court of Appeals for the Fifth Circuit in *Mississippi Power and Light Co.* v. *U.S. Nuclear Regulatory Commission,* 601 F.2d 223 (5th Cir. 1979), *cert. denied,* 444 U.S. 1102 (1980). This court held that—

(1) The NRC had the authority to recover the full cost of providing services to identifiable beneficiaries;

(2) The NRC could properly assess a fee for the costs of providing routine inspections necessary to ensure a licensee's compliance with the Atomic Energy Act of 1954, as amended, and with applicable regulations;

(3) The NRC could charge for costs incurred in conducting environmental reviews required by the National Environmental Policy Act (42 U.S.C. 4321);

(4) The NRC properly included the costs of uncontested hearings and of administrative and technical support services in the fee schedule;

(5) The NRC could assess a fee for renewing a license to operate a low-level radioactive waste burial site; and

(6) The NRC's fees were not arbitrary or capricious.

With respect to 10 CFR Part 171, on November 5, 1990, the Congress passed OBRA–90, which required that, for FYs 1991 through 1995, approximately 100 percent of the NRC budget authority, less appropriations from the NWF, be recovered through the assessment of fees. The OBRA–90 was subsequently amended to extend the 100 percent fee recovery requirement through FY 2000. The FY 2001 Energy and Water Development Appropriation Act (EWDAA) amended OBRA–90 to decrease the NRC's fee recovery amount by 2 percent per year beginning in FY 2001, until the fee recovery amount was 90 percent in FY 2005. The FY 2006 EWDAA extended this 90 percent fee recovery requirement for FY 2006. Section 637 of the Energy Policy Act of 2005 made the 90 percent fee recovery requirement permanent in FY 2007. As a result, the NRC is required to recover approximately 90 percent of its FY 2011 budget authority, less the amounts appropriated from the NWF, WIR, and generic homeland security activities through fees. To comply with this statutory requirement and in accordance with § 171.13, the NRC is publishing the amount of the FY 2011 annual fees for reactor licensees, fuel cycle licensees, materials licensees, and holders of CoCs, registrations of sealed source and devices, and Government agencies. The OBRA–90, consistent with the accompanying Conference Committee Report, and the amendments to OBRA–90, provides that—

(1) The annual fees will be based on approximately 90 percent of the Commission's FY 2011 budget of $1,053.6 million not including the following items: Funds appropriated from the NWF to cover the NRC's high-level waste program, amounts appropriated for WIR and generic homeland security activities, and the amount of funds collected from Part 170 fees;

(2) The annual fees shall, to the maximum extent practicable, have a reasonable relationship to the cost of regulatory services provided by the Commission; and

(3) The annual fees be assessed to those licensees the Commission, in its discretion, determines can fairly, equitably, and practicably contribute to their payment.

Part 171, which established annual fees for operating power reactors, effective October 20, 1986 (51 FR 33224; September 18, 1986), was challenged and upheld in its entirety in *Florida Power and Light Company* v. *United States,* 846 F.2d 765 (DC Cir. 1988), *cert. denied,* 490 U.S. 1045 (1989). Further, the NRC's FY 1991 annual fee rule methodology was upheld by the DC Circuit Court of Appeals in *Allied Signal* v. *NRC,* 988 F.2d 146 (DC Cir. 1993).

IX. Regulatory Flexibility Analysis

The NRC is required by the OBRA–90, as amended, to recover approximately 90 percent of its FY 2011 budget authority through the assessment of user fees. This Act further requires that the NRC establish a schedule of charges that fairly and equitably allocates the aggregate amount of these charges among licensees.

This proposed rule would establish the schedules of fees that are necessary to implement the Congressional mandate for FY 2011. This proposed rule would result in increases in the annual fees charged to certain licensees and holders of certificates, registrations, and approvals, and in decreases in annual fees charged to others. Licensees affected by the annual fee increases and decreases include those that qualify as a small entity under NRC's size standards in 10 CFR 2.810. The Regulatory Flexibility Analysis, prepared in accordance with 5 U.S.C. 604, is included as Appendix A to this proposed rule.

The Small Business Regulatory Enforcement Fairness Act (SBREFA) requires all Federal agencies to prepare a written compliance guide for each rule for which the agency is required by 5 U.S.C. 604 to prepare a regulatory flexibility analysis. Therefore, in compliance with the law, Attachment 1 of Appendix A to the Regulatory Flexibility Analysis is the small entity compliance guide for FY 2011.

X. Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to this proposed rule and that a backfit analysis is not required for this proposed rule. The backfit analysis is not required because these amendments do not require the modification of, or additions to, systems, structures, components, or the design of a facility, or the design approval or manufacturing license for a facility, or the procedures or organization required to design, construct, or operate a facility.

List of Subjects

10 CFR Part 170

Byproduct material, Import and export licenses, Intergovernmental

relations, Non-payment penalties, Nuclear materials, Nuclear power plants and reactors, Source material, Special nuclear material.

10 CFR Part 171

Annual charges, Byproduct material, Holders of certificates, Registrations, Approvals, Intergovernmental relations, Non-payment penalties, Nuclear materials, Nuclear power plants and reactors, Source material, Special nuclear material.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552, the NRC is proposing to adopt the following amendments to 10 CFR Parts 170 and 171.

PART 170—FEES FOR FACILITIES, MATERIALS, IMPORT AND EXPORT LICENSES, AND OTHER REGULATORY SERVICES UNDER THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

1. The authority citation for part 170 continues to read as follows:

Authority: Section 9701, Pub. L. 97–258, 96 Stat. 1051 (31 U.S.C. 9701); sec. 301, Pub. L. 92–314, 86 Stat. 227 (42 U.S.C. 2201w); sec. 201, Pub. L. 93–438, 88 Stat. 1242, as amended (42 U.S.C. 5841); sec. 205a, Pub. L. 101–576, 104 Stat. 2842, as amended (31 U.S.C. 901, 902); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note), sec. 623, Pub. L. 109–58, 119 Stat. 783 (42 U.S.C. 2201(w)); sec. 651(e), Pub. L. 109–58, 119 Stat. 806–810 (42 U.S.C. 2014, 2021, 2021b, 2111).

2. In § 170.11, paragraphs (a)(1)(iii)(A) and (a)(1)(iii)(B) are revised and paragraph (a)(1)(iii)(D) is removed and reserved.

The revisions read as follows:

§ 170.11 Exemptions.

(a) * * *

(1) * * *

(iii) * * *

(A) The report should be submitted for the specific purpose of supporting ongoing NRC generic regulatory improvements or efforts (e.g., rules, regulations, regulatory guides, and policy statements), and the agency, at the time the document is submitted, plans to use it for that purpose. The exemption applies even if ultimately the NRC does not use the document as planned;

(B) The NRC must be the primary beneficiary of the NRC's review and approval of these documents. This exemption does not apply to a topical report submitted for the purpose of obtaining NRC approval for future use of the report by the industry to address licensing or safety issues, even though the NRC may realize some benefits from its review and approval of the document; and

* * * * *

3. Section 170.20 is revised to read as follows:

§ 170.20 Average cost per professional staff-hour.

Fees for permits, licenses, amendments, renewals, special projects, 10 CFR part 55 re-qualification and replacement examinations and tests, other required reviews, approvals, and inspections under §§ 170.21 and 170.31 will be calculated using the professional staff-hour rate of $273 per hour.

4. In § 170.21, in the table, fee Category K is revised to read as follows:

§ 170.21 Schedule of fees for production and utilization facilities, review of standard referenced design approvals, special projects, inspections, and import and export licenses.

* * * * *

SCHEDULE OF FACILITY FEES

[*See* footnotes at end of table]

Facility categories and type of fees	Fees [1] [2]
* * * * * * *	
K. Import and export licenses:	
Licenses for the import and export only of production and utilization facilities or the export only of components for production and utilization facilities issued under 10 CFR Part 110.	
1. Application for import or export of production and utilization facilities [4] (including reactors and other facilities) and exports of components requiring Commission and Executive Branch review, for example, actions under 10 CFR 110.40(b).	
Application—new license, or amendment; or license exemption request	$17,700
2. Application for export of reactor and other components requiring Executive Branch review only, for example, those actions under 10 CFR 110.41(a).	
Application—new license, or amendment; or license exemption request	9,600
3. Application for export of components requiring the assistance of the Executive Branch to obtain foreign government assurances.	
Application—new license, or amendment; or license exemption request	4,400
4. Application for export of facility components and equipment not requiring Commission or Executive Branch review, or obtaining foreign government assurances.	
Application—new license, or amendment; or license exemption request	2,700
5. Minor amendment of any active export or import license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms or conditions or to the type of facility or component authorized for export and therefore, do not require in-depth analysis or review or consultation with the Executive Branch, U.S. host state, or foreign government authorities.	
Minor amendment to license	1,400

[1] Fees will not be charged for orders related to civil penalties or other civil sanctions issued by the Commission under § 2.202 of this chapter or for amendments resulting specifically from the requirements of these orders. For orders unrelated to civil penalties or other civil sanctions, fees will be charged for any resulting licensee-specific activities not otherwise exempted from fees under this chapter. Fees will be charged for approvals issued under a specific exemption provision of the Commission's regulations under Title 10 of the *Code of Federal Regulations* (e.g., 10 CFR 50.12, 10 CFR 73.5) and any other sections in effect now or in the future, regardless of whether the approval is in the form of a license amendment, letter of approval, safety evaluation report, or other form.

[2] Full cost fees will be determined based on the professional staff time and appropriate contractual support services expended. For applications currently on file and for which fees are determined based on the full cost expended for the review, the professional staff hours expended for the review of the application up to the effective date of the final rule will be determined at the professional rates in effect when the service was provided. For those applications currently on file for which review costs have reached an applicable fee ceiling established by the June 20, 1984, and July 2, 1990, rules, but are still pending completion of the review, the cost incurred after any applicable ceiling was reached through January 29, 1989, will not be billed to the applicant. Any professional staff-hours expended above those ceilings on or after January 30, 1989, will be assessed at the applicable rates established by § 170.20, as appropriate, except for topical reports whose costs exceed $50,000. Costs which exceed $50,000 for any topical report, amendment, revision, or supplement to a topical report completed or under review from January 30, 1989, through August 8, 1991, will not be billed to the applicant. Any professional hours expended on or after August 9, 1991, will be assessed at the applicable rate established in § 170.20.

* * * * * * * * *

[4] Imports only of major components for end-use at NRC-licensed reactors are now authorized under NRC general import license.

[5] In § 170.31, the table is revised to read as follows:

§ 170.31 Schedule of fees for materials licenses and other regulatory services, including inspections and import and export licenses.

* * * * *

SCHEDULE OF MATERIALS FEES

[*See* footnotes at end of table]

Category of materials licenses and type of fees [1]	Fee [2] [3]
1. Special nuclear material:	
A. (1) Licenses for possession and use of U–235 or plutonium for fuel fabrication activities.	
(a) Strategic Special Nuclear Material (High Enriched Uranium) [Program Code(s): 21130]	Full Cost.
(b) Low Enriched Uranium in Dispersible Form Used for Fabrication of Power Reactor Fuel [Program Code(s): 21210].	Full Cost.
(2) All other special nuclear materials licenses not included in Category 1.A.(1) which are licensed for fuel cycle activities.	
(a) Facilities with limited operations [Program Code(s): 21310, 21320]	Full Cost.
(b) Gas centrifuge enrichment demonstration facilities	Full Cost.
(c) Others, including hot cell facilities	Full Cost.
B. Licenses for receipt and storage of spent fuel and reactor-related Greater than Class C (GTCC) waste at an independent spent fuel storage installation (ISFSI) [Program Code(s): 23200].	Full Cost.
C. Licenses for possession and use of special nuclear material in sealed sources contained in devices used in industrial measuring systems, including x-ray fluorescence analyzers [4].	$1,300.
Application [Program Code(s): 22140]	
D. All other special nuclear material licenses, except licenses authorizing special nuclear material in unsealed form in combination that would constitute a critical quantity, as defined in § 150.11 of this chapter, for which the licensee shall pay the same fees as those under Category 1.A.[4].	
Application [Program Code(s): 22110, 22111, 22120, 22131, 22136, 22150, 22151, 22161, 22163, 22170, 23100, 23300, 23310].	$2,500.
E. Licenses or certificates for construction and operation of a uranium enrichment facility [Program Code(s): 21200]	Full Cost.
2. Source material:	
A. (1) Licenses for possession and use of source material for refining uranium mill concentrates to uranium hexafluoride [Program Code(s): 11400].	Full Cost.
(2) Licenses for possession and use of source material in recovery operations such as milling, in-situ recovery, heap-leaching, ore buying stations, ion-exchange facilities, and in processing of ores containing source material for extraction of metals other than uranium or thorium, including licenses authorizing the possession of byproduct waste material (tailings) from source material recovery operations, as well as licenses authorizing the possession and maintenance of a facility in a standby mode.	
(a) Conventional and Heap Leach facilities [Program Code(s): 11100]	Full Cost.
(b) Basic In Situ Recovery facilities [Program Code(s): 11500]	Full Cost.
(c) Expanded In Situ Recovery facilities [Program Code(s): 11510]	Full Cost.
(d) In Situ Recovery Resin facilities [Program Code(s): 11550]	Full Cost.
(e) Resin Toll Milling facilities [Program Code(s): 11555]	Full Cost.
(f) Other facilities [Program Code(s): 11700]	Full Cost.
(3) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal, except those licenses subject to the fees in Category 2.A.(2) or Category 2.A.(4) [Program Code(s): 11600, 12000].	Full Cost.
(4) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal incidental to the disposal of the uranium waste tailings generated by the licensee's milling operations, except those licenses subject to the fees in Category 2.A.(2) [Program Code(s): 12010].	Full Cost.
(5) Licenses that authorize the possession of source material related to removal of contaminants (source material) from drinking water [Program Code(s): 11820].	Full Cost.
B. Licenses which authorize the possession, use, and/or installation of source material for shielding.	
Application [Program Code(s): 11210]	$600.
C. All other source material licenses	$5,400.
Application [Program Code(s): 11200, 11220, 11221, 11230, 11300, 11800, 11810].	
3. Byproduct material:	
A. Licenses of broad scope for the possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution.	

SCHEDULE OF MATERIALS FEES—Continued

[*See* footnotes at end of table]

Category of materials licenses and type of fees [1]	Fee [2] [3]
Application [Program Code(s): 03211, 03212, 03213]	$12,800.
B. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution.	
Application [Program Code(s): 03214, 03215, 22135, 22162]	$4,400.
C. Licenses issued under §§ 32.72 and/or 32.74 of this chapter that authorize the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 170.11(a)(4).	
Application [Program Code(s): 02500, 02511, 02513]	$6,500.
D. [Reserved]	N/A [6].
E. Licenses for possession and use of byproduct material in sealed sources for irradiation of materials in which the source is not removed from its shield (self-shielded units).	
Application [Program Code(s): 03510, 03520]	$3,100.
F. Licenses for possession and use of less than 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials where the source is not exposed for irradiation purposes.	
Application [Program Code(s): 03511]	$6,400.
G. Licenses for possession and use of 10,000 curies or more of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials where the source is not exposed for irradiation purposes.	
Application [Program Code(s): 03521]	$60,900.
H. Licenses issued under Subpart A of part 32 of this chapter to distribute items containing byproduct material that require device review to persons exempt from the licensing requirements of part 30 of this chapter. The category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter.	
Application [Program Code(s): 03254, 03255]	$4,300.
I. Licenses issued under Subpart A of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require device evaluation to persons exempt from the licensing requirements of part 30 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter.	
Application [Program Code(s): 03250, 03251, 03252, 03253, 03256]	$11,400.
J. Licenses issued under Subpart B of part 32 of this chapter to distribute items containing byproduct material that require sealed source and/or device review to persons generally licensed under part 31 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter.	
Application [Program Code(s): 03240, 03241, 03243]	$2,000.
K. Licenses issued under Subpart B of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require sealed source and/or device review to persons generally licensed under part 31 of this chapter. This category does not include specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter.	
Application [Program Code(s): 03242, 03244]	$1,100.
L. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution.	
Application [Program Code(s): 01100, 01110, 01120, 03610, 03611, 03612, 03613]	$5,400.
M. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for research and development that do not authorize commercial distribution.	
Application [Program Code(s): 03620]	$3,500.
N. Licenses that authorize services for other licensees, except:	
(1) Licenses that authorize only calibration and/or leak testing services are subject to the fees specified in fee Category 3.P.; and	
(2) Licenses that authorize waste disposal services are subject to the fees specified in fee Categories 4.A., 4.B., and 4.C.	
Application [Program Code(s): 03219, 03225, 03226]	$6,400.
O. Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations.	
Application [Program Code(s): 03310, 03320]	$4,000.
P. All other specific byproduct material licenses, except those in Categories 4.A. through 9.D.	
Application [Program Code(s): 02400, 02410, 03120, 03121, 03122, 03123, 03124, 03220, 03221, 03222, 03800, 03810, 22130].	$1,500.
Q. Registration of a device(s) generally licensed under part 31 of this chapter.	
Registration	$400.
R. Possession of items or products containing radium-226 identified in 10 CFR 31.12 which exceed the number of items or limits specified in that section. [5]	
1. Possession of quantities exceeding the number of items or limits in 10 CFR 31.12(a)(4), or (5) but less than or equal to 10 times the number of items or limits specified.	
Application [Program Code(s): 02700]	$2,500.
2. Possession of quantities exceeding 10 times the number of items or limits specified in 10 CFR 31.12(a)(4), or (5).	
Application [Program Code(s): 02710]	$1,500.
S. Licenses for production of accelerator-produced radionuclides.	
Application [Program Code(s): 03210]	$6,500.
4. Waste disposal and processing:	

SCHEDULE OF MATERIALS FEES—Continued

[*See* footnotes at end of table]

Category of materials licenses and type of fees [1]	Fee [2] [3]
A. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of contingency storage or commercial land disposal by the licensee; or licenses authorizing contingency storage of low-level radioactive waste at the site of nuclear power reactors; or licenses for receipt of waste from other persons for incineration or other treatment, packaging of resulting waste and residues, and transfer of packages to another person authorized to receive or dispose of	
Application [Program Code(s): 03231, 03233, 03235, 03236, 06100, 06101].	Full Cost.
B. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of packaging or repackaging the material. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material.	
Application [Program Code(s): 03234]	$8,400.
C. Licenses specifically authorizing the receipt of prepackaged waste byproduct material, source material, or special nuclear material from other persons. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material.	
Application [Program Code(s): 03232]	$4,900.
5. Well logging:	
A. Licenses for possession and use of byproduct material, source material, and/or special nuclear material for well logging, well surveys, and tracer studies other than field flooding tracer studies.	
Application [Program Code(s): 03110, 03111, 03112]	$3,300.
B. Licenses for possession and use of byproduct material for field flooding tracer studies.	
Licensing [Program Code(s): 03113]	Full Cost.
6. Nuclear laundries:	
A. Licenses for commercial collection and laundry of items contaminated with byproduct material, source material, or special nuclear material.	
Application [Program Code(s): 03218]	$21,800.
7. Medical licenses:	
A. Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices.	
Application [Program Code(s): 02300, 02310]	$8,800.
B. Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.	
Application [Program Code(s): 02110]	$8,500.
C. Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices.	
Application [Program Code(s): 02120, 02121, 02200, 02201, 02210, 02220, 02230, 02231, 02240, 22160]	$2,700.
8. Civil defense:	
A. Licenses for possession and use of byproduct material, source material, or special nuclear material for civil defense activities.	
Application [Program Code(s): 03710]	$2,500.
9. Device, product, or sealed source safety evaluation:	
A. Safety evaluation of devices or products containing byproduct material, source material, or special nuclear material, except reactor fuel devices, for commercial distribution.	
Application—each device	$7,600.
B. Safety evaluation of devices or products containing byproduct material, source material, or special nuclear material manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel devices.	
Application—each device	$8,800.
C. Safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, except reactor fuel, for commercial distribution.	
Application—each source	$10,300.
D. Safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel.	
Application—each source	$1,040.
10. Transportation of radioactive material:	
A. Evaluation of casks, packages, and shipping containers.	
1. Spent Fuel, High-Level Waste, and plutonium air packages	Full Cost.
2. Other Casks	Full Cost.
B. Quality assurance program approvals issued under part 71 of this chapter.	
1. Users and Fabricators.	
Application	$3,900.
Inspections	Full Cost.
2. Users.	
Application	$3,900.
Inspections	Full Cost.
C. Evaluation of security plans, route approvals, route surveys, and transportation security devices (including immobilization devices).	Full Cost.
11. Review of standardized spent fuel facilities.	Full Cost.
12. Special projects:	Full Cost.

SCHEDULE OF MATERIALS FEES—Continued

[*See* footnotes at end of table]

Category of materials licenses and type of fees [1]	Fee [2 3]
Including approvals, preapplication/licensing activities, and inspections.	
13. A. Spent fuel storage cask Certificate of Compliance.	Full Cost.
B. Inspections related to storage of spent fuel under § 72.210 of this chapter	Full Cost.
14. A. Byproduct, source, or special nuclear material licenses and other approvals authorizing decommissioning, decontamination, reclamation, or site restoration activities under parts 30, 40, 70, 72, and 76 of this chapter.	Full Cost.
B. Site-specific decommissioning activities associated with unlicensed sites, regardless of whether or not the sites have been previously licensed.	Full Cost.
15. Import and Export licenses:	
Licenses issued under part 110 of this chapter for the import and export only of special nuclear material, source material, tritium and other byproduct material, and the export only of heavy water, or nuclear grade graphite (fee categories 15.A. through 15.E.)	
A. Application for export or import of nuclear materials, including radioactive waste requiring Commission and Executive Branch review, for example, those actions under 10 CFR 110.40(b).	
Application—new license, or amendment; or license exemption request	$17,700.
B. Application for export or import of nuclear material, including radioactive waste, requiring Executive Branch review, but not Commission review. This category includes applications for the export and import of radioactive waste and requires NRC to consult with domestic host state authorities (i.e., Low-Level Radioactive Waste Compact Commission, the U.S. Environmental Protection Agency, etc.).	
Application B—new license, or amendment; or license exemption request	$9,600.
C. Application for export of nuclear material, for example, routine reloads of low enriched uranium reactor fuel and/or natural uranium source material requiring the assistance of the Executive Branch to obtain foreign government assurances.	
Application—new license, or amendment; or license exemption request	$4,400.
D. Application for export or import of nuclear material, including radioactive waste, not requiring Commission or Executive Branch review, or obtaining foreign government assurances. This category includes applications for export or import of radioactive waste where the NRC has previously authorized the export or import of the same form of waste to or from the same or similar parties located in the same country, requiring only confirmation from the receiving facility and licensing authorities that the shipments may proceed according to previously agreed understandings and procedures.	
Application—new license, or amendment; or license exemption request	$2,700.
E. Minor amendment of any active export or import license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms and conditions or to the type/quantity/chemical composition of the material authorized for export and, therefore, do not require in-depth analysis, review, or consultations with other Executive Branch, U.S. host state, or foreign government authorities.	
Minor amendment	$1,400.
Licenses issued under part 110 of this chapter for the import and export only of Category 1 and Category 2 quantities of radioactive material listed in Appendix P to part 110 of this chapter (fee categories 15.F. through 15.R.).	
Category 1 (Appendix P, 10 CFR Part 110) Exports:	
F. Application for export of Category 1 materials involving an exceptional circumstances review under 10 CFR 110.42(e)(4).	
Application—new license, or amendment; or license exemption request	$15,000.
G. Application for export of Category 1 materials requiring Executive Branch review, Commission review, and/or government-to-government consent.	
Application—new license, or amendment; or license exemption request	$8,700.
H. Application for export of Category 1 materials requiring government-to-government consent.	
Application—new license, or amendment; or license exemption request	$5,500.
I. Requests for additional government-to-government consent requests in support of an export license application or active export license.	
Application—new license, or amendment; or license exemption request	$270.
Category 2 (Appendix P, 10 CFR part 110) Exports:	
J. Application for export of Category 2 materials involving an exceptional circumstances review under 10 CFR 110.42(e)(4).	
Application—new license, or amendment; or license exemption request	$15,000.
K. Applications for export of Category 2 materials requiring Executive Branch review and/or Commission review.	
Application—new license, or amendment; or license exemption request	$8,700.
L. Application for the export of Category 2 materials.	
Application—new license, or amendment; or license exemption request	$5,500.
M. [Reserved]	N/A [6].
N. [Reserved]	N/A [6].
O. [Reserved]	N/A [6].
P. [Reserved]	N/A [6].
Q. [Reserved]	N/A [6].
Minor Amendments (Category 1 and 2, Appendix P, 10 CFR part 110, Export and Imports):	
R. Minor amendment of any active export or import license, for example, to extend the expiration date, change domestic information, or make other revisions which do not involve any substantive changes to license terms and conditions or to the type/quantity/chemical composition of the material authorized for export and, therefore, do not require in-depth analysis, review, or consultations with other Executive Branch, U.S. host state, or foreign authorities.	
Minor amendment	$1,400.
16. Reciprocity:	
Agreement State licensees who conduct activities under the reciprocity provisions of 10 CFR 150.20.	
Application	$2,300.
17. Master materials licenses of broad scope issued to Government agencies.	
Application [Program Code(s): 03614]	Full Cost.

SCHEDULE OF MATERIALS FEES—Continued

[*See* footnotes at end of table]

Category of materials licenses and type of fees [1]	Fee [2] [3]
18. Department of Energy.	
A. Certificates of Compliance. Evaluation of casks, packages, and shipping containers (including spent fuel, high-level waste, and other casks, and plutonium air packages).	Full Cost.
B. Uranium Mill Tailings Radiation Control Act (UMTRCA) activities.	Full Cost.

[1] *Types of fees*—Separate charges, as shown in the schedule, will be assessed for preapplication consultations and reviews; applications for new licenses, approvals, or license terminations; possession-only licenses; issuances of new licenses and approvals; certain amendments and renewals to existing licenses and approvals; safety evaluations of sealed sources and devices; generally licensed device registrations; and certain inspections. The following guidelines apply to these charges:

(a) *Application and registration fees.* Applications for new materials licenses and export and import licenses; applications to reinstate expired, terminated, or inactive licenses, except those subject to fees assessed at full costs; applications filed by Agreement State licensees to register under the general license provisions of 10 CFR 150.20; and applications for amendments to materials licenses that would place the license in a higher fee category or add a new fee category must be accompanied by the prescribed application fee for each category.

(1) Applications for licenses covering more than one fee category of special nuclear material or source material must be accompanied by the prescribed application fee for the highest fee category.

(2) Applications for new licenses that cover both byproduct material and special nuclear material in sealed sources for use in gauging devices will pay the appropriate application fee for fee Category 1.C. only.

(b) *Licensing fees.* Fees for reviews of applications for new licenses, renewals, and amendments to existing licenses, preapplication consultations and other documents submitted to the NRC for review, and project manager time for fee categories subject to full cost fees are due upon notification by the Commission in accordance with § 170.12(b).

(c) *Amendment fees.* Applications for amendments to export and import licenses must be accompanied by the prescribed amendment fee for each license affected. An application for an amendment to an export or import license or approval classified in more than one fee category must be accompanied by the prescribed amendment fee for the category affected by the amendment, unless the amendment is applicable to two or more fee categories, in which case the amendment fee for the highest fee category would apply.

(d) *Inspection fees.* Inspections resulting from investigations conducted by the Office of Investigations and nonroutine inspections that result from third-party allegations are not subject to fees. Inspection fees are due upon notification by the Commission in accordance with 170.12(c).

(e) *Generally licensed device registrations under 10 CFR 31.5.* Submittals of registration information must be accompanied by the prescribed fee.

[2] Fees will not be charged for orders related to civil penalties or other civil sanctions issued by the Commission under 10 CFR 2.202 or for amendments resulting specifically from the requirements of these orders. For orders unrelated to civil penalties or other civil sanctions, fees will be charged for any resulting licensee-specific activities not otherwise exempted from fees under this chapter. Fees will be charged for approvals issued under a specific exemption provision of the Commission's regulations under Title 10 of the *Code of Federal Regulations* (e.g., 10 CFR 30.11, 40.14, 70.14, 73.5, and any other sections in effect now or in the future), regardless of whether the approval is in the form of a license amendment, letter of approval, safety evaluation report, or other form. In addition to the fee shown, an applicant may be assessed an additional fee for sealed source and device evaluations as shown in Categories 9.A. through 9.D.

[3] Full cost fees will be determined based on the professional staff time multiplied by the appropriate professional hourly rate established in § 170.20 in effect when the service is provided, and the appropriate contractual support services expended. For applications currently on file for which review costs have reached an applicable fee ceiling established by the June 20, 1984, and July 2, 1990, rules, but are still pending completion of the review, the cost incurred after any applicable ceiling was reached through January 29, 1989, will not be billed to the applicant. Any professional staff-hours expended above those ceilings on or after January 30, 1989, will be assessed at the applicable rates established by § 170.20, as appropriate, except for topical reports for which costs exceed $50,000. Costs which exceed $50,000 for each topical report, amendment, revision, or supplement to a topical report completed or under review from January 30, 1989, through August 8, 1991, will not be billed to the applicant. Any professional hours expended on or after August 9, 1991, will be assessed at the applicable rate established in § 170.20.

[4] Licensees paying fees under Categories 1.A., 1.B., and 1.E. are not subject to fees under Categories 1.C. and 1.D. for sealed sources authorized in the same license, except for an application that deals only with the sealed sources authorized by the license.

[5] Persons who possess radium sources that are used for operational purposes in another fee category are not also subject to the fees in this category. (This exception does not apply if the radium sources are possessed for storage only.)

[6] There are no existing NRC licenses in the fee category.

PART 171—ANNUAL FEES FOR REACTOR LICENSES AND FUEL CYCLE LICENSES AND MATERIALS LICENSES, INCLUDING HOLDERS OF CERTIFICATES OF COMPLIANCE, REGISTRATIONS, AND QUALITY ASSURANCE PROGRAM APPROVALS AND GOVERNMENT AGENCIES LICENSED BY THE NRC

6. The authority citation for part 171 continues to read as follows:

Authority: Section 7601, Pub. L. 99–272, 100 Stat. 146, as amended by sec. 5601, Pub. L. 100–203, 101 Stat. 1330, as amended by sec. 3201, Pub. L. 101–239, 103 Stat. 2132, as amended by sec. 6101, Pub. L. 101–508, 104 Stat. 1388, as amended by sec. 2903a, Pub. L. 102–486, 106 Stat. 3125 (42 U.S.C. 2213, 2214), and as amended by Title IV, Pub. L. 109–103, 119 Stat. 2283 (42 U.S.C. 2214); sec. 301, Pub. L. 92–314, 86 Stat. 227 (42 U.S.C. 2201w); sec. 201, Pub. L. 93–438, 88 Stat. 1242, as amended (42 U.S.C. 5841); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note), sec. 651(e), Pub. L.109–58, 119 Stat. 806–810 (42 U.S.C. 2014, 2021, 2021b, 2111).

7. In § 171.15, paragraph (b)(1), paragraph (b)(2) introductory text, paragraph (c)(1), paragraph (c)(2) introductory text, paragraph (d)(1) introductory text, and paragraphs (d)(2), (d)(3), and (e), are revised to read as follows:

§ 171.15 Annual fees: Reactor licenses and independent spent fuel storage licenses.

* * * * *

(b)(1) The FY 2011 annual fee for each operating power reactor which must be collected by September 30, 2011, is $4,669,000.

(2) The FY 2011 annual fee is comprised of a base annual fee for power reactors licensed to operate, a base spent fuel storage/reactor decommissioning annual fee, and associated additional charges (fee-relief adjustment). The activities comprising the spent storage/reactor decommissioning base annual fee are shown in paragraphs (c)(2)(i) and (ii) of this section. The activities comprising the FY 2011 fee-relief adjustment are shown in paragraph (d)(1) of this section. The activities comprising the FY 2011 base annual fee for operating power reactors are as follows:

* * * * *

(c)(1) The FY 2011 annual fee for each power reactor holding a 10 CFR part 50 license that is in a decommissioning or possession-only status and has spent fuel onsite, and for each independent spent fuel storage 10 CFR part 72 licensee who does not hold a 10 CFR part 50 license, is $234,000.

(2) The FY 2011 annual fee is comprised of a base spent fuel storage/reactor decommissioning annual fee (which is also included in the operating power reactor annual fee shown in paragraph (b) of this section) and an additional charge (fee-relief adjustment). The activities comprising the FY 2011 fee-relief adjustment are shown in paragraph (d)(1) of this section. The activities comprising the FY 2011 spent fuel storage/reactor decommissioning rebaselined annual fee are:

* * * * *

(d)(1) The fee-relief adjustment allocated to annual fees includes a surcharge for the activities listed in paragraph (d)(1)(i) of this section, plus the amount remaining after total budgeted resources for the activities included in paragraphs (d)(1)(ii) and (iii) of this section are reduced by the appropriations the NRC receives for these types of activities. If the NRC's appropriations for these types of activities are greater than the budgeted resources for the activities included in paragraphs (d)(1)(ii) and (iii) of this section for a given FY, annual fees will be reduced. The activities comprising the FY 2011 fee-relief adjustment are as follows:

* * * * *

(2) The total FY 2011 fee-relief adjustment allocated to the operating power reactor class of licenses is −$3.4 million, not including the amount allocated to the spent fuel storage/reactor decommissioning class. The FY 2011 operating power reactor fee-relief adjustment to be assessed to each operating power reactor is approximately −$32,248. This amount is calculated by dividing the total operating power reactor fee-relief adjustment (−$3.4 million) by the number of operating power reactors (104).

(3) The FY 2011 fee-relief adjustment allocated to the spent fuel storage/reactor decommissioning class of licenses is −$236,572. The FY 2011 spent fuel storage/reactor decommissioning fee-relief adjustment to be assessed to each operating power reactor, each power reactor in decommissioning or possession-only status that has spent fuel onsite, and to each independent spent fuel storage 10 CFR part 72 licensee who does not hold a 10 CFR part 50 license, is approximately −$1,923. This amount is calculated by dividing the total fee-relief adjustment costs allocated to this class by the total number of power reactor licenses, except those that permanently ceased operations and have no fuel onsite, and 10 CFR part 72 licensees who do not hold a 10 CFR part 50 license.

(e) The FY 2011 annual fees for licensees authorized to operate a research and test (nonpower) reactor licensed under part 50 of this chapter, unless the reactor is exempted from fees under § 171.11(a), are as follows:

Research reactor—$86,100.

Test reactor—$86,100.

8. In § 171.16, paragraph (b) introductory text, paragraphs (c) and (d), and paragraph (e) introductory text are revised to read as follows:

§ 171.16 Annual fees: Materials licensees, holders of certificates of compliance, holders of sealed source and device registrations, holders of quality assurance program approvals, and government agencies licensed by the NRC.

* * * * *

(c) A licensee who is required to pay an annual fee under this section may qualify as a small entity. If a licensee qualifies as a small entity and provides the Commission with the proper certification along with its annual fee payment, the licensee may pay reduced annual fees as shown in the following table. Failure to file a small entity certification in a timely manner could result in the receipt of a delinquent invoice requesting the outstanding balance due and/or denial of any refund that might otherwise be due. The small entity fees are as follows:

	Maximum annual fee per licensed category
Small Businesses Not Engaged in Manufacturing (Average gross receipts over last 3 completed fiscal years):	
$450,000 to $6.5 million	$2,300
Less than $450,000	500
Small Not-For-Profit Organizations (Annual Gross Receipts):	
$450,000 to $6.5 million	2,300
Less than $450,000	500
Manufacturing entities that have an average of 500 employees or fewer:	
35 to 500 employees	2,300
Fewer than 35 employees	500
Small Governmental Jurisdictions (Including publicly supported educational institutions) (Population):	
20,000 to 50,000	2,300
Fewer than 20,000	500
Educational Institutions that are not State or Publicly Supported, and have 500 Employees or Fewer:	
35 to 500 employees	2,300
Fewer than 35 employees	500

(d) The FY 2011 annual fees are comprised of a base annual fee and an allocation for fee-relief adjustment. The activities comprising the FY 2011 fee-relief adjustment are shown for convenience in paragraph (e) of this section. The FY 2011 annual fees for materials licensees and holders of certificates, registrations, or approvals subject to fees under this section are shown in the following table:

SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC

[*See* footnotes at end of table]

Category of materials licenses	Annual fees [1, 2, 3]
1. Special nuclear material:	
A. (1) Licenses for possession and use of U–235 or plutonium for fuel fabrication activities.	
(a) Strategic Special Nuclear Material (High Enriched Uranium) [Program Code(s): 21130]	$6,078,000

SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[*See* footnotes at end of table]

Category of materials licenses	Annual fees [1, 2, 3]
(b) Low Enriched Uranium in Dispersible Form Used for Fabrication of Power Reactor Fuel [Program Code(s): 21210]	2,287,000
(2) All other special nuclear materials licenses not included in Category 1.A.(1) which are licensed for fuel cycle activities.	
(a) Facilities with limited operations [Program Code(s): 21310, 21320]	752,000
(b) Gas centrifuge enrichment demonstration facilities	1,176,000
(c) Others, including hot cell facilities	588,000
B. Licenses for receipt and storage of spent fuel and reactor-related Greater than Class C (GTCC) waste at an independent spent fuel storage installation (ISFSI) [Program Code(s): 23200]	N/A [11]
C. Licenses for possession and use of special nuclear material in sealed sources contained in devices used in industrial measuring systems, including x-ray fluorescence analyzers [Program Code(s): 22140]	3,600
D. All other special nuclear material licenses, except licenses authorizing special nuclear material in unsealed form in combination that would constitute a critical quantity, as defined in § 150.11 of this chapter, for which the licensee shall pay the same fees as those for Category 1.A.(2) [Program Code(s): 22110, 22111, 22120, 22131, 22136, 22150, 22151, 22161, 22163, 22170, 23100, 23300, 23310]	6,900
E. Licenses or certificates for the operation of a uranium enrichment facility [Program Code(s): 21200]	3,268,000
2. Source material:	
A. (1) Licenses for possession and use of source material for refining uranium mill concentrates to uranium hexafluoride [Program Code(s): 11400]	1,242,000
(2) Licenses for possession and use of source material in recovery operations such as milling, in-situ recovery, heap-leaching, ore buying stations, ion-exchange facilities and in-processing of ores containing source material for extraction of metals other than uranium or thorium, including licenses authorizing the possession of byproduct waste material (tailings) from source material recovery operations, as well as licenses authorizing the possession and maintenance of a facility in a standby mode.	
(a) Conventional and Heap Leach facilities [Program Code(s): 11100]	31,900
(b) Basic In Situ Recovery facilities [Program Code(s): 11500]	30,300
(c) Expanded In Situ Recovery facilities [Program Code(s): 11510]	34,300
(d) In Situ Recovery Resin facilities [Program Code(s): 11550]	28,800
(e) Resin Toll Milling facilities [Program Code(s): 11555]	N/A [5]
(f) Other facilities [4] [Program Code(s): 11700]	N/A [5]
(3) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal, except those licenses subject to the fees in Category 2.A.(2) or Category 2.A.(4) [Program Code(s): 11600, 12000]	N/A [5]
(4) Licenses that authorize the receipt of byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act, from other persons for possession and disposal incidental to the disposal of the uranium waste tailings generated by the licensee's milling operations, except those licenses subject to the fees in Category 2.A.(2) [Program Code(s): 12010]	10,400
(5) Licenses that authorize the possession of source material related to removal of contaminants (source material) from drinking water [Program Code(s): 11820]	7,200
B. Licenses that authorize only the possession, use, and/or installation of source material for shielding [Program Code(s): 11210]	1,700
C. All other source material licenses [Program Code(s): 11200, 11220, 11221, 11230, 11300, 11800, 11810]	11,900
3. Byproduct material:	
A. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution [Program Code(s): 03211, 03212, 03213]	42,600
B. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for processing or manufacturing of items containing byproduct material for commercial distribution [Program Code(s): 03214, 03215, 22135, 22162]	11,900
C. Licenses issued under §§ 32.72 and/or 32.74 of this chapter authorizing the processing or manufacturing and distribution or redistribution of radiopharmaceuticals, generators, reagent kits, and/or sources and devices containing byproduct material. This category also includes the possession and use of source material for shielding authorized under part 40 of this chapter when included on the same license. This category does not apply to licenses issued to nonprofit educational institutions whose processing or manufacturing is exempt under § 171.11(a)(1). [Program Code(s): 02500, 02511, 02513]	16,200
D. [Reserved]	N/A [5]
E. Licenses for possession and use of byproduct material in sealed sources for irradiation of materials in which the source is not removed from its shield (self-shielded units) [Program Code(s): 03510, 03520]	8,700
F. Licenses for possession and use of less than 10,000 curies of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials in which the source is not exposed for irradiation purposes [Program Code(s): 03511]	15,200
G. Licenses for possession and use of 10,000 curies or more of byproduct material in sealed sources for irradiation of materials in which the source is exposed for irradiation purposes. This category also includes underwater irradiators for irradiation of materials in which the source is not exposed for irradiation purposes [Program Code(s): 03521]	137,500
H. Licenses issued under Subpart A of part 32 of this chapter to distribute items containing byproduct material that require device review to persons exempt from the licensing requirements of part 30 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter [Program Code(s): 03254, 03255]	8,100

SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[*See* footnotes at end of table]

Category of materials licenses	Annual fees [1, 2, 3]
I. Licenses issued under Subpart A of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require device evaluation to persons exempt from the licensing requirements of part 30 of this chapter, except for specific licenses authorizing redistribution of items that have been authorized for distribution to persons exempt from the licensing requirements of part 30 of this chapter [Program Code(s): 03250, 03251, 03252, 03253, 03256]	19,600
J. Licenses issued under Subpart B of part 32 of this chapter to distribute items containing byproduct material that require sealed source and/or device review to persons generally licensed under part 31 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter [Program Code(s): 03240, 03241, 03243]	4,700
K. Licenses issued under Subpart B of part 32 of this chapter to distribute items containing byproduct material or quantities of byproduct material that do not require sealed source and/or device review to persons generally licensed under part 31 of this chapter, except specific licenses authorizing redistribution of items that have been authorized for distribution to persons generally licensed under part 31 of this chapter [Program Code(s): 03242, 03244]	3,100
L. Licenses of broad scope for possession and use of byproduct material issued under parts 30 and 33 of this chapter for research and development that do not authorize commercial distribution [Program Code(s): 01100, 01110, 01120, 03610, 03611, 03612, 03613]	14,100
M. Other licenses for possession and use of byproduct material issued under part 30 of this chapter for research and development that do not authorize commercial distribution [Program Code(s): 03620]	8,100
N. Licenses that authorize services for other licensees, except: (1) Licenses that authorize only calibration and/or leak testing services are subject to the fees specified in fee Category 3.P.; and (2) Licenses that authorize waste disposal services are subject to the fees specified in fee categories 4.A., 4.B., and 4.C. [Program Code(s): 03219, 03225, 03226]	14,300
O. Licenses for possession and use of byproduct material issued under part 34 of this chapter for industrial radiography operations. This category also includes the possession and use of source material for shielding authorized under part 40 of this chapter when authorized on the same license [Program Code(s): 03310, 03320]	25,700
P. All other specific byproduct material licenses, except those in Categories 4.A. through 9.D. [Program Code(s): 02400, 02410, 03120, 03121, 03122, 03123, 03124, 03220, 03221, 03222, 03800, 03810, 22130]	4,800
Q. Registration of devices generally licensed under part 31 of this chapter	N/A [13]
R. Possession of items or products containing radium-226 identified in 10 CFR 31.12 which exceed the number of items or limits specified in that section: [14]	
1. Possession of quantities exceeding the number of items or limits in 10 CFR 31.12(a)(4), or (5) but less than or equal to 10 times the number of items or limits specified [Program Code(s): 02700]	8,900
2. Possession of quantities exceeding 10 times the number of items or limits specified in 10 CFR 31.12(a)(4), or (5) [Program Code(s): 02710]	4,800
S. Licenses for production of accelerator-produced radionuclides [Program Code(s): 03210]	15,300
4. Waste disposal and processing:	
A. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of contingency storage or commercial land disposal by the licensee; or licenses authorizing contingency storage of low-level radioactive waste at the site of nuclear power reactors; or licenses for receipt of waste from other persons for incineration or other treatment, packaging of resulting waste and residues, and transfer of packages to another person authorized to receive or dispose of waste material [Program Code(s): 03231, 03233, 03235, 03236, 06100, 06101]	N/A [5]
B. Licenses specifically authorizing the receipt of waste byproduct material, source material, or special nuclear material from other persons for the purpose of packaging or repackaging the material. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material [Program Code(s): 03234]	31,300
C. Licenses specifically authorizing the receipt of prepackaged waste byproduct material, source material, or special nuclear material from other persons. The licensee will dispose of the material by transfer to another person authorized to receive or dispose of the material [Program Code(s): 03232]	14,400
5. Well logging:	
A. Licenses for possession and use of byproduct material, source material, and/or special nuclear material for well logging, well surveys, and tracer studies other than field flooding tracer studies [Program Code(s): 03110, 03111, 03112]	9,900
B. Licenses for possession and use of byproduct material for field flooding tracer studies [Program Code(s): 03113]	N/A [5]
6. Nuclear laundries:	
A. Licenses for commercial collection and laundry of items contaminated with byproduct material, source material, or special nuclear material [Program Code(s): 03218]	44,900
7. Medical licenses:	
A. Licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, or special nuclear material in sealed sources contained in gamma stereotactic radiosurgery units, teletherapy devices, or similar beam therapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license [Program Code(s): 02300, 02310]	17,600
B. Licenses of broad scope issued to medical institutions or two or more physicians under parts 30, 33, 35, 40, and 70 of this chapter authorizing research and development, including human use of byproduct material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] [Program Code(s): 02110]	45,000
C. Other licenses issued under parts 30, 35, 40, and 70 of this chapter for human use of byproduct material, source material, and/or special nuclear material, except licenses for byproduct material, source material, or special nuclear material in sealed sources contained in teletherapy devices. This category also includes the possession and use of source material for shielding when authorized on the same license.[9] [Program Code(s): 02120, 02121, 02200, 02201, 02210, 02220, 02230, 02231, 02240, 22160]	8,400

SCHEDULE OF MATERIALS ANNUAL FEES AND FEES FOR GOVERNMENT AGENCIES LICENSED BY NRC—Continued

[*See* footnotes at end of table]

Category of materials licenses	Annual fees [1, 2, 3]
8. Civil defense:	
A. Licenses for possession and use of byproduct material, source material, or special nuclear material for civil defense activities [Program Code(s): 03710]	8,900
9. Device, product, or sealed source safety evaluation:	
A. Registrations issued for the safety evaluation of devices or products containing byproduct material, source material, or special nuclear material, except reactor fuel devices, for commercial distribution	11,500
B. Registrations issued for the safety evaluation of devices or products containing byproduct material, source material, or special nuclear material manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel devices	13,300
C. Registrations issued for the safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, except reactor fuel, for commercial distribution	15,600
D. Registrations issued for the safety evaluation of sealed sources containing byproduct material, source material, or special nuclear material, manufactured in accordance with the unique specifications of, and for use by, a single applicant, except reactor fuel	1,600
10. Transportation of radioactive material:	
A. Certificates of Compliance or other package approvals issued for design of casks, packages, and shipping containers.	
1. Spent Fuel, High-Level Waste, and plutonium air packages	N/A [6]
2. Other Casks	N/A [6]
B. Quality assurance program approvals issued under part 71 of this chapter.	
1. Users and Fabricators	N/A [6]
2. Users	N/A [6]
C. Evaluation of security plans, route approvals, route surveys, and transportation security devices (including immobilization devices)	N/A [6]
11. Standardized spent fuel facilities	N/A [6]
12. Special Projects	N/A [6]
13. A. Spent fuel storage cask Certificate of Compliance	N/A [6]
B. General licenses for storage of spent fuel under 10 CFR 72.210	N/A [12]
14. Decommissioning/Reclamation:	
A. Byproduct, source, or special nuclear material licenses and other approvals authorizing decommissioning, decontamination, reclamation, or site restoration activities under parts 30, 40, 70, 72, and 76 of this chapter	N/A [7]
B. Site-specific decommissioning activities associated with unlicensed sites, whether or not the sites have been previously licensed	N/A [7]
15. Import and Export licenses	N/A [8]
16. Reciprocity	N/A [8]
17. Master materials licenses of broad scope issued to Government agencies [Program Code(s): 03710]	476,000
18. Department of Energy:	
A. Certificates of Compliance	1,028,000 [10]
B. Uranium Mill Tailings Radiation Control Act (UMTRCA) activities	771,000

[1] Annual fees will be assessed based on whether a licensee held a valid license with the NRC authorizing possession and use of radioactive material during the current FY. The annual fee is waived for those materials licenses and holders of certificates, registrations, and approvals who either filed for termination of their licenses or approvals or filed for possession only/storage licenses before October 1, 2010, and permanently ceased licensed activities entirely before this date. Annual fees for licensees who filed for termination of a license, downgrade of a license, or for a possession-only license during the FY and for new licenses issued during the FY will be prorated in accordance with the provisions of § 171.17. If a person holds more than one license, certificate, registration, or approval, the annual fee(s) will be assessed for each license, certificate, registration, or approval held by that person. For licenses that authorize more than one activity on a single license (e.g., human use and irradiator activities), annual fees will be assessed for each category applicable to the license. Licensees paying annual fees under Category 1.A.(1) are not subject to the annual fees for Categories 1.C. and 1.D. for sealed sources authorized in the license.

[2] Payment of the prescribed annual fee does not automatically renew the license, certificate, registration, or approval for which the fee is paid. Renewal applications must be filed in accordance with the requirements of parts 30, 40, 70, 71, 72, or 76 of this chapter.

[3] Each FY, fees for these materials licenses will be calculated and assessed in accordance with § 171.13 and will be published in the **Federal Register** for notice and comment.

[4] Other facilities include licenses for extraction of metals, heavy metals, and rare earths.

[5] There are no existing NRC licenses in these fee categories. If NRC issues a license for these categories, the Commission will consider establishing an annual fee for this type of license.

[6] Standardized spent fuel facilities, 10 CFR parts 71 and 72 Certificates of Compliance and related Quality Assurance program approvals, and special reviews, such as topical reports, are not assessed an annual fee because the generic costs of regulating these activities are primarily attributable to users of the designs, certificates, and topical reports.

[7] Licensees in this category are not assessed an annual fee because they are charged an annual fee in other categories while they are licensed to operate.

[8] No annual fee is charged because it is not practical to administer due to the relatively short life or temporary nature of the license.

[9] Separate annual fees will not be assessed for pacemaker licenses issued to medical institutions that also hold nuclear medicine licenses under Categories 7.B. or 7.C.

[10] This includes Certificates of Compliance issued to the Department of Energy that are not funded from the Nuclear Waste Fund.

[11] *See* § 171.15(c).

[12] *See* § 171.15(c).

[13] No annual fee is charged for this category because the cost of the general license registration program applicable to licenses in this category will be recovered through 10 CFR part 170 fees.

[14] Persons who possess radium sources that are used for operational purposes in another fee category are not also subject to the fees in this category. (This exception does not apply if the radium sources are possessed for storage only.)

(e) The fee-relief adjustment allocated to annual fees includes the budgeted resources for the activities listed in paragraph (e)(1) of this section, plus the total budgeted resources for the activities included in paragraphs (e)(2) and (e)(3) of this section, as reduced by the appropriations NRC receives for these types of activities. If the NRC's appropriations for these types of activities are greater than the budgeted resources for the activities included in paragraphs (e)(2) and (e)(3) of this section for a given FY, a negative fee-relief adjustment (or annual fee reduction) will be allocated to annual fees. The activities comprising the FY 2011 fee-relief adjustment are as follows:

* * * * *

Dated at Rockville, Maryland, this 2nd day of March 2011.

For the Nuclear Regulatory Commission.

J.E. Dyer,

Chief Financial Officer.

Note: This Appendix Will Not Appear in the Code of Federal Regulations.

Appendix A to Proposed Rule, Revision of Fee Schedules; Fee Recovery for Fiscal Year 2011—Regulatory Flexibility Analysis for the Final Amendments to 10 CFR Part 170 (License Fees) and 10 CFR Part 171 (Annual Fees)

I. Background

The Regulatory Flexibility Act (RFA), as amended at 5 U.S.C. 601 *et seq.*, requires that agencies consider the impact of their rulemakings on small entities and, consistent with applicable statutes, consider alternatives to minimize these impacts on the businesses, organizations, and government jurisdictions to which they apply.

The Nuclear Regulatory Commission (NRC or the Commission) has established standards for determining which NRC licensees qualify as small entities (Title 10 of the *Code of Federal Regulations* (10 CFR) 2.810). These standards were based on the Small Business Administration's most common receipts-based size standards and provides for business concerns that are manufacturing entities. The NRC uses the size standards to reduce the impact of annual fees on small entities by establishing a licensee's eligibility to qualify for a maximum small entity fee. The small entity fee categories in § 171.16(c) of this proposed rule are based on the NRC's size standards.

The NRC is required each year, under the Omnibus Budget Reconciliation Act of 1990 (OBRA–90), as amended, to recover approximately 90 percent of its budget authority (less amounts appropriated from the Nuclear Waste Fund (NWF) and for other activities specifically removed from the fee base), through fees to NRC licensees and applicants. The OBRA–90 requires that the schedule of charges established by rulemaking should fairly and equitably allocate the total amount to be recovered from the NRC's licensees and be assessed under the principle that licensees who require the greatest expenditure of agency resources pay the greatest annual charges. Since FY 1991, the NRC has complied with OBRA–90 by issuing a final rule that amends its fee regulations. These final rules have established the methodology used by the NRC in identifying and determining the fees to be assessed and collected in any given FY.

The Commission is proposing to rebaseline its 10 CFR Part 171 annual fees in FY 2011. As compared with FY 2010 annual fees, the FY 2011 proposed rebaselined fees are higher for four classes of licensees (spent fuel storage and reactors in decommissioning facilities, research and test reactors, fuel facilities, and transportation), and lower for one class of licensees (power reactors). Within the uranium recovery fee class, the proposed annual fees for most licensees decrease, while the proposed annual fee for one fee category increases. The annual fee increases for most fee categories in the materials users' fee class.

The Small Business Regulatory Enforcement Fairness Act (SBREFA) provides Congress with the opportunity to review agency rules before they go into effect. Under this legislation, the NRC annual fee rule is considered a "major" rule and must be reviewed by Congress and the Comptroller General before the rule becomes effective.

The SBREFA also requires that an agency prepare a written compliance guide to assist small entities in complying with each rule for which a Regulatory Flexibilty Analysis (RFA) is prepared. As required by law, this analysis and the small entity compliance guide (Attachment 1) have been prepared for the FY 2011 fee rule.

II. Impact on Small Entities

The fee rule results in substantial fees charged to those individuals, organizations, and companies licensed by the NRC, including those licensed under the NRC materials program. Comments received on previous proposed fee rules and the small entity certifications in response to previous final fee rules indicate that licensees qualifying as small entities under the NRC's size standards are primarily materials licensees. Therefore, this analysis will focus on the economic impact of fees on materials licensees. In FY 2010, about 29 percent of these licensees (approximately 921 licensees) qualified as small entities.

Commenters on previous fee rulemakings consistently indicated that the following would occur if the proposed annual fees were not modified:

1. Large firms would gain an unfair competitive advantage over small entities. Commenters noted that small and very small companies ("Mom and Pop" operations) would find it more difficult to absorb the annual fee than a large corporation or a high-volume type of operation. In competitive markets, such as soil testing, annual fees would put small licensees at an extreme competitive disadvantage with their much larger competitors because the proposed fees would be identical for both small and large firms.

2. Some firms would be forced to cancel their licenses. A licensee with receipts of less than $500,000 per year stated that the proposed rule would, in effect, force it to relinquish its soil density gauge and license, thereby reducing its ability to do its work effectively. Other licensees, especially well-loggers, noted that the increased fees would force small businesses to abandon the materials license altogether. Commenters estimated that the proposed rule would cause roughly 10 percent of the well-logging licensees to terminate their licenses immediately and approximately 25 percent to terminate before the next annual assessment.

3. Some companies would go out of business.

4. Some companies would have budget problems. Many medical licensees noted that, along with reduced reimbursements, the proposed increase of the existing fees and the introduction of additional fees would significantly affect their budgets. Others noted that, in view of the cuts by Medicare and other third party carriers, the fees would produce a hardship difficult for some facilities to meet.

Over 3,000 licenses, approvals, and registration terminations have been requested since the NRC first established annual fees for materials licenses. Although some terminations were requested because the license was no longer needed or could be combined with registrations, indications are that the economic impact of the fees caused other terminations.

To alleviate the significant impact of the annual fees on a substantial number of small entities, the NRC considered the following alternatives in accordance with the RFA in developing each of its fee rules since FY 1991.

1. Base fees on some measure of the amount of radioactivity possessed by the licensee (e.g., number of sources).

2. Base fees on frequency of use of licensed radioactive material (e.g., volume of patients).

3. Base fees on the NRC size standards for small entities.

The NRC has reexamined its previous evaluations of these alternatives and continues to believe that a maximum fee for small entities is the most appropriate and effective option for reducing the impact of fees on small entities.

III. Maximum Fee

The SBREFA and its implementing guidance do not provide specific guidelines on what constitutes a significant economic impact on a small entity. In developing the maximum small entity annual fee in FY 1991, the NRC examined 10 CFR Part 170 licensing and inspection fees and Agreement State fees for fee categories which were expected to have a substantial number of small entities. Six Agreement States (Washington, Texas, Illinois, Nebraska, New York, and Utah) were used as benchmarks in the establishment of the maximum small entity annual fee in FY 1991.

The NRC maximum small entity fee was established as an annual fee only. In addition to the annual fee, NRC small entity licensees were required to pay amendment, renewal

and inspection fees. In setting the small entity annual fee, NRC ensured that the total amount small entities paid would not exceed the maximum paid in the six benchmark Agreement States.

Of the six benchmark States, the NRC used Washington's maximum Agreement State fee of $3,800 as the ceiling for total fees. Thus, the NRC's small entity fee was developed to ensure that the total fees paid by NRC small entities would not exceed $3,800. Given the NRC's FY 1991 fee structure for inspections, amendments, and renewals, a small entity annual fee established at $1,800 allowed the total fee (small entity annual fee plus yearly average for inspections, amendments, and renewal fees) for all categories to fall under the $3,800 ceiling.

In FY 1992, the NRC introduced a second, lower tier to the small entity fee in response to concerns that the $1,800 fee, when added to the license and inspection fees, still imposed a significant impact on small entities with relatively low gross annual receipts. For purposes of the annual fee, each small entity size standard was divided into an upper and lower tier. Small entity licensees in the upper tier continued to pay an annual fee of $1,800, while those in the lower tier paid an annual fee of $400.

Based on the changes that had occurred since FY 1991, the NRC reanalyzed its maximum small entity annual fees in FY 2000 and determined that the small entity fees should be increased by 25 percent to reflect the increase in the average fees paid by other materials licensees since FY 1991, as well as changes in the fee structure for materials licensees. The structure of fees NRC charged its materials licensees changed during the period between 1991 and 1999. Costs for materials license inspections, renewals, and amendments, which were previously recovered through Part 170 fees for services, are now included in the Part 171 annual fees assessed to materials licensees. Because of the 25 percent increase, in FY 2000 the maximum small entity annual fee increased from $1,800 to $2,300. However, despite the increase, total fees for many small entities were reduced because they no longer paid Part 170 fees. Costs not recovered from small entities were allocated to other materials licensees and to power reactors.

While reducing the impact on many small entities, the NRC determined that the maximum annual fee of $2,300 for small entities could continue to have a significant impact on materials licensees with relatively low annual gross receipts. Therefore, the NRC continued to provide the lower-tier small entity annual fee for small entities with relatively low gross annual receipts, manufacturing concerns, and for educational institutions not State or publicly supported with fewer than 35 employees. The NRC also increased the lower-tier small entity fee by 25 percent, the same percentage increase to the maximum small entity annual fee, resulting in the lower-tier small entity fee increasing from $400 to $500 in FY 2000.

The NRC stated in the RFA for the FY 2001 final fee rule that it would reexamine the small entity fees every 2 years, in the same years in which it conducts the biennial review of fees as required by the Chief Financial Officers Act. Accordingly, the NRC examined the small entity fees again in FY 2003 and FY 2005, determining that a change was not warranted to those fees established in FY 2001.

As part of the small entity review in FY 2007, the NRC also considered whether it should establish reduced fees for small entities under Part 170. The NRC received one comment requesting that small entity fees be considered for certain export licenses, particularly in light of the recent increases to Part 170 fees for these licenses. Because the NRC's Part 170 fees are not assessed to a licensee or applicant on a regular basis (i.e., they are only assessed when a licensee or applicant requests a specific service from the NRC), the NRC does not believe that the impact of its Part 170 fees warrants a fee reduction for small entities, in addition to the Part 171 small entity fee reduction. Regarding export licenses, the NRC notes that interested parties can submit a single application for a broad scope, multi-year license that permits exports to multiple countries. Because the NRC charges fees per application, this process minimizes the fees for export applicants. Because a single NRC fee can cover numerous exports, and because there are a limited number of entities who apply for these licenses, the NRC does not anticipate that the Part 170 export fees will have a significant impact on a substantial number of small entities. Therefore, the NRC retained the $2,300 small entity annual fee and the $500 lower-tier small entity annual fee for FY 2007 and FY 2008.

The NRC conducted an in-depth biennial review of the FY 2009 small entity fees. The review noted significant changes between FY 2000 and FY 2008 in both the external and internal environment which impacted fees for NRC's materials users licensees. Since FY 2000, small entity licensees in the upper tier had increased approximately 53 percent. In addition, due to changes in the law, NRC is now required to recover only 90 percent of its budget authority compared to 100 percent recovery required in FY 2000. This 10 percent fee-relief has influenced the materials users' annual fees. A decrease in the NRC's budget allocation to the materials users also influenced annual fees in FY 2007 and FY 2008.

Based on the review, the NRC changed the methodology for reviewing small entity fees. The NRC determined the maximum small entity fee should be adjusted each biennial year using a fixed percentage of 39 percent applied to the prior 2-year weighted average of materials users fees for all fee categories which have small entity licensees. The 39 percent was based on the small entity annual fee for FY 2005, which was the first year the NRC was required to recover only 90 percent of its budget authority. The FY 2005 small entity annual fee of $2,300 was 39 percent of the 2-year weighted average for all fee categories in FY 2005 and FY 2006 that had an upper-tier small entity licensee. The new methodology allows small entity licensees to be able to predict changes in their fee in the biennial year based on the materials users' fees for the previous 2 years. Using a 2-year weighted average smoothes the fluctuations caused by programmatic and budget variables and reflects the importance of the fee categories with the majority of small entities. The agency also determined the lower-tier annual fee should remain at 22 percent of the maximum small entity annual fee. In FY 2009, the NRC decreased the maximum small entity fee from $2,300 to $1,900 and decreased the lower-tier annual fee from $500 to $400.

In FY 2011, the NRC reexamined the small entity fee, including the new methodology developed in FY 2009. Per the methodology used in FY 2009, the agency computed the small entity fee by using a fixed percentage of 39 percent applied to the prior 2-year weighted average of materials users' fees. This resulted in an upper-tier small entity fee amount that was 7 percent higher than the current fee of $1,900, a reflection of the increase in annual fees for the materials users licensees for the past 2 years. Implementing this increase would have a disproportionate impact upon small NRC licensees. Therefore in FY 2011, NRC has decided to limit the increase for upper tier fees to $2,300, a 21 percent increase, and the lower tier fee to $500, a 25 percent increase. This increase in the small entity fee partially reflects the changes to the annual fee for the materials users for the previous 2 years.

IV. Summary

The NRC has determined that the 10 CFR Part 171 annual fees significantly impact a substantial number of small entities. A maximum fee for small entities strikes a balance between the requirement to recover 90 percent of the NRC budget and the requirement to consider means of reducing the impact of the fee on small entities. Based on its RFA, the NRC concludes that a maximum annual fee of $2,300 for small entities and a lower-tier small entity annual fee of $500 for small businesses and not-for-profit organizations with gross annual receipts of less than $450,000, small governmental jurisdictions with a population of fewer than 20,000, small manufacturing entities that have fewer than 35 employees, and educational institutions that are not State or publicly supported and have fewer than 35 employees, reduces the impact on small entities. At the same time, these reduced annual fees are consistent with the objectives of OBRA–90. Thus, the fees for small entities maintain a balance between the objectives of OBRA–90 and the RFA.

Attachment 1 to Appendix A—U.S. Nuclear Regulatory Commission Small Entity Compliance Guide; Fiscal Year 2011

Contents

I. Introduction

The Small Business Regulatory Enforcement Fairness Act (SBREFA) requires all Federal agencies to prepare a written compliance guide for each rule for which the agency is required by U.S.C. 604 to prepare a regulatory flexibility analysis. Therefore, in

compliance with the law, Attachment 1 to the Regulatory Flexibility Analysis is the small entity compliance guide for FY 2011.

Licensees may use this guide to determine whether they qualify as a small entity under NRC regulations and are eligible to pay reduced FY 2011 annual fees assessed under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 171. The U.S. Nuclear Regulatory Commission (NRC) has established two tiers of annual fees for those materials licensees who qualify as small entities under the NRC's size standards.

Licensees who meet the NRC's size standards for a small entity (listed in 10 CFR 2.810) must submit a completed NRC Form 526 "Certification of Small Entity Status for the Purposes of Annual Fees Imposed under 10 CFR Part 171" to qualify for the reduced annual fee. This form can be accessed on the NRC's Web site at *http://www.nrc.gov*. The form can then be accessed by selecting "Business with NRC," then "NRC Forms," selecting NRC Form 526. For licensees who cannot access the NRC's Web site, NRC Form 526 may be obtained through the local point of contact listed in the NRC's "Materials Annual Fee Billing Handbook," NUREG/BR–0238, which is enclosed with each annual fee billing. Alternatively, the form may be obtained by calling the fee staff at 301–415–7554, or by e-mailing the fee staff at *fees.resource@nrc.gov*.

The completed form, the appropriate small entity fee, and the payment copy of the invoice should be mailed to the U.S. Nuclear Regulatory Commission, Accounts Receivable/Payable Branch, at the address indicated on the invoice. Failure to file the NRC small entity certification Form 526 in a timely manner may result in the denial of any refund that might otherwise be due.

II. NRC Definition of Small Entity

For purposes of compliance with its regulations (10 CFR 2.810), the NRC has defined a small entity as follows:

(1) *Small business*—a for-profit concern that (a) provides a service, or a concern that is not engaged in manufacturing, with average gross receipts of $6.5 million or less over its last 3 completed fiscal years; or (b) a manufacturing concern with an average number of 500 or fewer employees based on employment during each pay period for the preceding 12 calendar months;

(2) *Small organizations*—a not-for-profit organization which is independently owned and operated and has annual gross receipts of $6.5 million or less;

(3) *Small governmental jurisdiction*—a government of a city, county, town, township, village, school district, or special district, with a population of less than 50,000; and

(4) *Small educational institution*—an educational institution that is (a) supported by a qualifying small governmental jurisdiction, or (b) one that is not State or publicly supported and has 500 or fewer employees.[1]

To further assist licensees in determining if they qualify as a small entity, the following guidelines are provided, which are based on the Small Business Administration's regulations (13 CFR Part 121).

(1) A small business concern is an independently owned and operated entity which is not considered dominant in its field of operations.

(2) The number of employees means the total number of employees in the parent company, any subsidiaries and/or affiliates, including both foreign and domestic locations (i.e., not solely the number of employees working for the licensee or conducting NRC-licensed activities for the company).

(3) Gross annual receipts include all revenue received or accrued from any source, including receipts of the parent company, any subsidiaries and/or affiliates, and account for both foreign and domestic locations. Receipts include all revenues from sales of products and services, interest, rent, fees, and commissions from whatever sources derived (i.e., not solely receipts from NRC-licensed activities).

(4) A licensee who is a subsidiary of a large entity, including a foreign entity, does not qualify as a small entity.

III. NRC Small Entity Fees

In 10 CFR 171.16(c), the NRC has established two tiers of fees for licensees that qualify as a small entity under the NRC's size standards. The fees are as follows:

	Maximum annual fee per licensed category
Small Businesses Not Engaged in Manufacturing (Average gross receipts over last 3 completed fiscal years):	
$450,000 to $6.5 million	$2,300
Less than $450,000	500
Small Not-For-Profit Organizations (Annual Gross Receipts):	
$450,000 to $6.5 million	2,300
Less than $450,000	500
Manufacturing entities that have an average of 500 employees or fewer:	
35 to 500 employees	2,300
Fewer than 35 employees	500
Small Governmental Jurisdictions (Including publicly supported educational institutions) (Population):	
20,000 to 50,000	2,300
Fewer than 20,000	500
Educational Institutions that are not State or Publicly Supported, and have 500 Employees or Fewer	
35 to 500 employees	2,300
Fewer than 35 employees	500
Fewer than 20,000	500

IV. Instructions for Completing NRC Small Entity Form 526

1. Complete all items on NRC Form 526 as follows: (**Note:** Incomplete or improperly completed forms will be returned as unacceptable.)

(a) Enter the license number and invoice number exactly as they appear on the annual fee invoice.

(b) Enter the North American Industry Classification System.

(c) Enter the licensee's name and address exactly as they appear on the invoice. Annotate name and/or address changes for billing purposes on the payment copy of the invoice—include contact's name, telephone number, e-mail address, and company Web site address. Correcting the name and/or address on NRC Form 526 or on the invoice does not constitute a request to amend the license.

(d) Check the appropriate size standard under which the licensee qualifies as a small entity. Check one box only. Note the following:

(i) A licensee who is a subsidiary of a large entity, including foreign entities, does not qualify as a small entity. The calculation of a firm's size includes the employees or receipts of all affiliates. Affiliation with another concern is based on the power to control, whether exercised or not. Such factors as common ownership, common management, and identity of interest (often found in members of the same family),

[1] An educational institution referred to in the size standards is an entity whose primary function is education, whose programs are accredited by a nationally recognized accrediting agency or association, who is legally authorized to provide a program of organized instruction or study, who provides an educational program for which it awards academic degrees, and whose educational programs are available to the public.

among others, are indications of affiliation. The affiliated business concerns need not be in the same line of business.

(ii) Gross annual receipts, as used in the size standards, include all revenue received or accrued by your company from all sources, regardless of the form of the revenue and not solely receipts from licensed activities.

(iii) NRC's size standards on a small entity are based on the Small Business Administration's regulations (13 CFR Part 121).

(iv) The size standards apply to the licensee, not to the individual authorized users who may be listed in the license.

2. If the invoice states the "Amount Billed Represents 50% Proration," the amount due is not the prorated amount shown on the invoice but rather one-half of the maximum small entity annual fee shown on NRC Form 526 for the size standard under which the licensee qualifies (either $1,150 or $250) for each category billed.

3. If the invoice amount is less than the reduced small entity annual fee shown on this form, pay the amount on the invoice; there is no further reduction. In this case, do not file NRC Form 526. However, if the invoice amount is greater than the reduced small entity annual fee, file NRC Form 526 and pay the amount applicable to the size standard you checked on the form.

4. The completed NRC Form 526 must be submitted with the required annual fee payment and the "Payment Copy" of the invoice to the address shown on the invoice.

5. Section 171.16(c) states licensees shall submit a proper certification with its annual fee payment each year. Failure to submit NRC Form 526 at the time the annual fee is paid will require the licensee to pay the full amount of the invoice.

The NRC sends invoices to its licensees for the full annual fee, even though some licensees qualify for reduced fees as small entities. Licensees who qualify as small entities and file NRC Form 526, which certifies eligibility for small entity fees, may pay the reduced fee, which is either $2,300 or $500 for a full year, depending on the size of the entity, for each fee category shown on the invoice. Licensees granted a license during the first 6 months of the fiscal year, and licensees who file for termination or for a "possession-only" license and permanently cease licensed activities during the first 6 months of the fiscal year, pay only 50 percent of the annual fee for that year. Such invoices state that the "amount billed represents 50% proration."

Licensees must file a new small entity form (NRC Form 526) with the NRC each fiscal year to qualify for reduced fees in that year. Because a licensee's "size," or the size standards, may change from year to year, the invoice reflects the full fee, and licensees must complete and return NRC Form 526 for the fee to be reduced to the small entity fee amount. Licensees will not receive a new invoice for the reduced amount. The completed NRC Form 526, the payment of the appropriate small entity fee, and the "Payment Copy" of the invoice should be mailed to the U. S. Nuclear Regulatory Commission, Accounts Receivable/Payable Branch, at the address indicated on the invoice.

If you have questions regarding the NRC's annual fees, please contact the license fee staff at 301–415–7554, e-mail the fee staff at *fees.resource@nrc.gov*, or write to the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Office of the Chief Financial Officer.

False certification of small entity status could result in civil sanctions being imposed by the NRC under the Program Fraud Civil Remedies Act of 1986, 31 U.S.C. 3801 *et seq.* NRC's implementing regulations are found at 10 CFR Part 13.

[FR Doc. 2011–5968 Filed 3–16–11; 8:45 am]

BILLING CODE 7590–01–P

Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 1:38 PM
To: Ake, Jon
Subject: FW: GI-199 Media Coverage

We could use your help on a call with RI and state liaisons at 3:00 ET today.

Ben

From: Kauffman, John
Sent: Thursday, March 17, 2011 11:54 AM
To: Beasley, Benjamin
Cc: Killian, Lauren
Subject: GI-199 Media Coverage

FYI,
From today's NRC News Summary:

MSNBC Report Says Indian Point Unit 3 Is Most At Risk Of Damage From Earthquake. On its "Open Channel" blog, MSNBC (3/17, Dedman) covers comments from New York Gov. Andrew Cuomo, who "ordered a safety review of the Indian Point nuclear plant" after "one of its reactors ranked first for risk of damage from an earthquake in a study published Wednesday." The MSNBC report was based on NRC damage estimate data for the nation's 104 commercial nuclear power plants, and Indian Point Unit 3 was rated as the most at risk from an earthquake. The NRC said Unit 3 "had a 1 in 10,000 chance each year of damage to its radioactive core from an earthquake." MSNBC said the NRC published the initial data in August, "allowing msnbc.com to rank the plants by risk. The NRC public affairs staff stressed to all callers on Wednesday that it had not done the rankings, but it did not question the accuracy of the data."

The AP (3/17) reports New York Gov. Andrew Cuomo said Wednesday "that he wants to review information from the Nuclear Regulatory Commission about safety of a nuclear plant that lies near a seismic fault line 35 miles north of Manhattan." Cuomo told reporters, "Frankly, that was surprising to me," adding, "So that matter is a concern. We are going to check into it...immediately." The Governor said the state's review will include the Indian Point Energy Center on the Hudson River in suburban Westchester County.

AG/149

From: ANS Broadcasts
To: Coe, Doug
Subject: Media Outreach Clarification
Date: Thursday, March 17, 2011 1:38:21 AM

Dear ANS Member,

We have encouraged you to join us in educating the public and defending the nuclear industry. In doing so, we mentioned specifically contacting the media. **We want to be clear that each individual should work through their employer's media team in this regard.** Most employers have policies regarding media contact that can, in some cases, even extend to family members.

There is no doubt that the events upon us are unique, however we want to be sure that our guidance does not conflict with the needs of our industry and the companies that support us all.

Thank you for your support of the nuclear community.

Sincerely,

Jack Tuohy
Executive Director
American Nuclear Society

AG/150

From:	Bano, Mahmooda
To:	RES International Travel Dist; Eisenberg, Wendy
Cc:	Calvo, Antony; Hoxie, Chris
Subject:	Pre Trip -DPrelewicz- April 2011 Spring CAMP (Bariloche Argentina) Meeting (3).docx
Date:	Thursday, March 17, 2011 1:38:38 PM
Attachments:	Pre Trip -DPrelewicz- April 2011 Spring CAMP (Bariloche Argentina) Meeting (3).docx

AG/151

International Travel Pre-Trip Notification

This is due 30 days before trip start date. Please complete the light shaded area.

TRAVEL INFORMATION

• **Traveler Name(s):** (include Office/Division)	Chris Hoxie, RES/DSA Antony Calvo, RES/DSA Josh Whitman, RES/DSA Dan Prelewicz, ISL	• **Phone #(s):**	301-251-7562 301-251-7677 301-251-7514 301-255-2273
• **E-mail Address(es):**	chris.hoxie@nrc.gov antony.calvo@nrc.gov josh.whitman@nrc.gov danp@islinc.com	• **Location(s):**	Rockville, MD Rockville, MD Rockville, MD Rockville, MD
• **Multiple Travelers:**	☐ **Less than 4** ☒ **4 or more** (see below)		
If 4+, Coordinating Office:	RES		

If 4+, Office Director Approvals:	(1)	**RES: Brian W. Sheron**	Date:	
(Office Director approves travelers	(2)	**CHOOSE ONE OF THE FOLLOWING**	Date:	
from his/her office only)	(3)	**CHOOSE ONE OF THE FOLLOWING**	Date:	
	(4)	**CHOOSE ONE OF THE FOLLOWING**	Date:	

ADAMS Accession Number: [If 4+, Submit NRC Daily Note with ML# of pre-trip notification 30 days before trip start date]	ML110730387
• **Travel Dates** [mm/dd/yyyy]:	04/24/2011 to 04/29/2011
• **Destination(s)** [City, Country]:	San Carlos De Bariloche, Argentina

• **Framework:**

- ☐ **Export and Import Licensing**
- ☐ **Multilateral Cooperation and Assistance**
- ☐ **Treaties, Agreements, and Conventions**
- ☒ **International Cooperative Research**
- ☐ **Bilateral Cooperation and Assistance**
- ☐ **Other (specify)**

• **International Organization:**

- ☐ NEA/CSNI
- ☐ NEA/CNRA
- ☐ NEA/RWMC
- ☐ NEA/MDEP
- ☐ NEA/CRPPH
- ☐ IAEA/NS(TRANSSC)
- ☐ IAEA/NS(WASSC)
- ☐ IAEA/(NUSSC)
- ☐ IAEA/NS(RASSC)
- ☐ IAEA/Safeguards
- ☐ IAEA/NS
- ☐ IAEA/NE
- ☐ IAEA/Technical Cooperation
- ☒ Other: Code Application & Maintenance Program (CAMP)

• **Purpose of Travel:**	This trip is necessary for NRC to fulfill it's obligations under the CAMP agreements it has with 25 nations.
• **Desired Outcome:**	The desired outcome is for NRC to meet its CAMP obligation to hold one CAMP meeting on foreign soil each year, and to continue to energize the participants to use the TRACE code and share their results with the CAMP community.
• **Traveler Role(s):**	Chris Hoxie is the lead-off speaker at the Spring 2011 CAMP meeting. He will provide a 45 minute presentation of the TRACE-PARCS-SNAP roadmap to the CAMP participants to inform them of NRC's future thermal hydraulic development

	plans, and to gather their comments. He will also present the new SNAP-TRACE Uncertainty Module software specification and prototype. Josh Whitman will present the details of the improvements that have been made to TRACE, including the new features of TRACE Version 5, Patch 3. This includes new fuel rod modeling capabilities, an improved mechanistic flashing model, and a new "vessel-to-vessel" capability that allows improved modeling of BWR and PWR cores. Doug Barber (ISL contractor) will present the status of the RELAP5 code including the bugs that were fixed to allow the publication of RELAP5, Mod 3.3 Patch 4. The contractor will also take the CAMP meeting minutes. Antony Calvo, the CAMP Manager, will run the CAMP Technical Meeting that takes place on the third day. During that time, Mr. Calvo will make a presentation on the status of CAMP, and will go over with each country the status of their CAMP membership, including the status of their "like-in-kind" contributions.

• **Is this an NRC Core or Non-Core Trip?** [*Core* means NRC-Funded. *Non-Core* is externally funded or travel to Canada]	☒ Core ☐ Non-Core
• **Is there a speech or presentation to be given?** [If yes, send ADAMS ML# of presentations in an EDO One Week Look Ahead]	☒ Yes ☐ No
• **Are policy issues or other items of Commission interest to be raised?**	☐ Yes ☒ No
If yes, how will the Commission be informed?	Via the trip report.

Owen, Lucy

From: Hurley, Laura
Sent: Thursday, March 17, 2011 1:42 PM
To: Collins, Elmo; Howell, Art; Kennedy, Kriss; Pruett, Troy; Vegel, Anton; Davis, Marlone; Overland, Dean; Clark, Jeff; Azua, Ray; Melfi, Jim; Schaup, William; Dufrene, Linda; Dricks, Victor; Uselding, Lara; Kalyanam, Kaly; Hay, Michael; Herrera, Marisa; Fuller, Karla; Weil, Jenny; OEMAIL Resource; Haire, Mark
Subject: Waterford - NRC Examination Approval
Attachments: WAT Exam Approval Ltr_.doc

ML110750550

AG/152

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

March 16, 2011

Joseph A. Kowalewski, Vice President, Operations
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-0751

SUBJECT: WATERFORD, UNIT 3 - NRC INITIAL OPERATOR LICENSING EXAMINATION APPROVAL 05000382/2011301

Dear Mr. Kowalewski:

The purpose of this letter is to confirm the final arrangements for the upcoming operator licensing examinations at Waterford 3.

The NRC has completed its review of the operator license applications submitted in connection with this examination and separately provided a list of approved applicants to John Signorell, Operations Instructor. Note that any examination waivers and application denials have been addressed in separate correspondence.

The NRC has approved the subject examinations and hereby authorizes you to administer the written examination in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1, on March 29, 2011. The NRC staff will administer the operating tests during the week of March 21, 2011. This examination has undergone extensive review by my staff and representatives responsible for licensed operator training at your facility. Based on this review, I have concluded that the examination meets the guidelines of NUREG-1021 for content, operational, and discrimination validity. By administering this examination, you also agree that it meets NUREG-1021 guidelines, and is appropriate for measuring the qualifications of licensed operator applicants at your facility. If you determine that this examination is not appropriate for licensing operators at your facility, do not administer the examination and contact me at (817) 860-8159.

Please contact your Chief Examiner, Chris Steely, at (817) 276-4432, if you have any questions or identify any errors or changes in the license level (RO or SRO) or type of examination (partial or complete written examination and/or operating test) specified for each applicant.

Sincerely,

Kelly Clayton for
/RA/
Mark S. Haire, Chief
Operations Branch
Division of Reactor Safety

Docket: 50-382
License: NPF-38

Enclosure: ES-201-4

cc w/enclosure:
John Signorelli, Operations Instructor
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

cc w/o enclosure:
distribution via listserv for Waterford

Electronic distribution by RIV:
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Deputy Regional Administrator (Art.Howell@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
DRP Deputy Director (Troy.Pruett@nrc.gov)
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Resident Inspector (Dean.Overland@nrc.gov)
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RITS Coordinator (Marisa.Herrera@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
OEMail Resource
Branch Chief, OB (Mark.Haire@nrc.gov)

ADAMS: Yes	X SUNSI Review Complete	Reviewer Initials: lah
	X Publicly Available	X Non-Sensitive

LA:OB	OE:OB	C:OB	
LAHurley	CDSteely	MSHaire	
//RA/	***/RA/***	***KDC for /RA/***	
03/09/11	03/16/11	03/16/11	

OFFICIAL RECORD COPY T=Telephone E=E-mail F=Fax

Kauffman, John

From: Ake, Jon
Sent: Thursday, March 17, 2011 1:43 PM
To: Kauffman, John
Subject: RE: Conference call with RI

Hi john-
How are things going?
Where's Marty?

From: Kauffman, John
Sent: Thursday, March 17, 2011 11:40 AM
To: Ake, Jon
Subject: Conference call with RI
Importance: High

Jon,
Please call me or e-mail me, asap. Thanks. JVK

AG/153

From: Rivera-Lugo, Richard
To: RES_DE
Subject: IMMEDIATE ACTION: OGC request for all Yucca Mt documents
Date: Thursday, March 17, 2011 1:46:33 PM
Attachments: ML110740769.pdf
ACTION G20110183 - Due Today.msg
Importance: High

DE Staff,

If you have worked in any projects related to *Yucca Mountain High-Level Waste Repository*, please send me an e-mail ASAP TODAY with the following information:

- Job Code Number (JCN)
- Title of the project
- Technical area focus of the project (e.g. seismic, structural)
- Brief description (1 or 2 sentences)

This information needs to be provided TODAY to the House of Representatives Committee on Oversight and Government Reform. Staff who have been involved in Yucca Mountain-related work will be contacted later to gather more detailed information from each of the projects.

I apologize for the quick turnaround request.

Richie

Richard Rivera-Lugo, EIT, MEM
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission – HQ
RES/DE
Ph. 301-251-7652
Fax 301-251-7420
Mail M.S. C5C07M
E-mail Richard.Rivera-Lugo@nrc.gov

From: Dion, Jeanne
Sent: Thursday, March 17, 2011 1:18 PM
To: Rivera-Lugo, Richard; Ibarra, Jose; Armstrong, Kenneth
Cc: Gibson, Kathy; Case, Michael; Coyne, Kevin; Rini, Brett; Sheron, Brian; Uhle, Jennifer; Dempsey, Heather
Subject: ACTION: OGC request for all Yucca Mt documents
Importance: High

Everyone,
I apologize for the quick turnaround for this. The House of Representatives Committee on Oversight and Government Reform has requested all records and information related to Yucca High-level waste repository. See the Attached announcement and ticket.

ACTION

Divisions: Respond to me ASAP **today 3/17** with the approximate number of projects that supported Yucca Mountain.

I don't need all the details yet- I do need to respond to OGC with an approximate date we can produce the documents.

Call me if you any questions

Thanks,

Jeanne Dion
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Jeanne.dion@nrc.gov
301-251-7482

From: Gonzalez, Michelle
To: Coyne, Kevin
Subject: FW: Scanned Documents
Date: Thursday, March 17, 2011 1:57:49 PM
Attachments: KSS100_20110317_19362439.pdf

-----Original Message-----
From: CS-RESKODA100-04@100.59 [mailto:CS-RESKODA100-04@100.59]
Sent: Thursday, March 17, 2011 8:38 PM
To: Gonzalez, Michelle
Subject: Scanned Documents

Kodak Scan Station
v3.0.0.5

AG/155

U.S.NRC
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Protecting People and the Environment

viewgraphs current on website not exact

RIC 2011
Safety/Risk Assessment Results and Regulatory Approach to GI-199

Marty Stutzke, NRC/RES
Kamal Manoly, NRC/NRR
March 8, 2011

Team effort:
Pat Hiland - panel chair
NRR/DE Director
Jon Ake - Senior Seismologist
John Kaufman and Carne Kellin } GIP

Last page (49) lists references - All publically available

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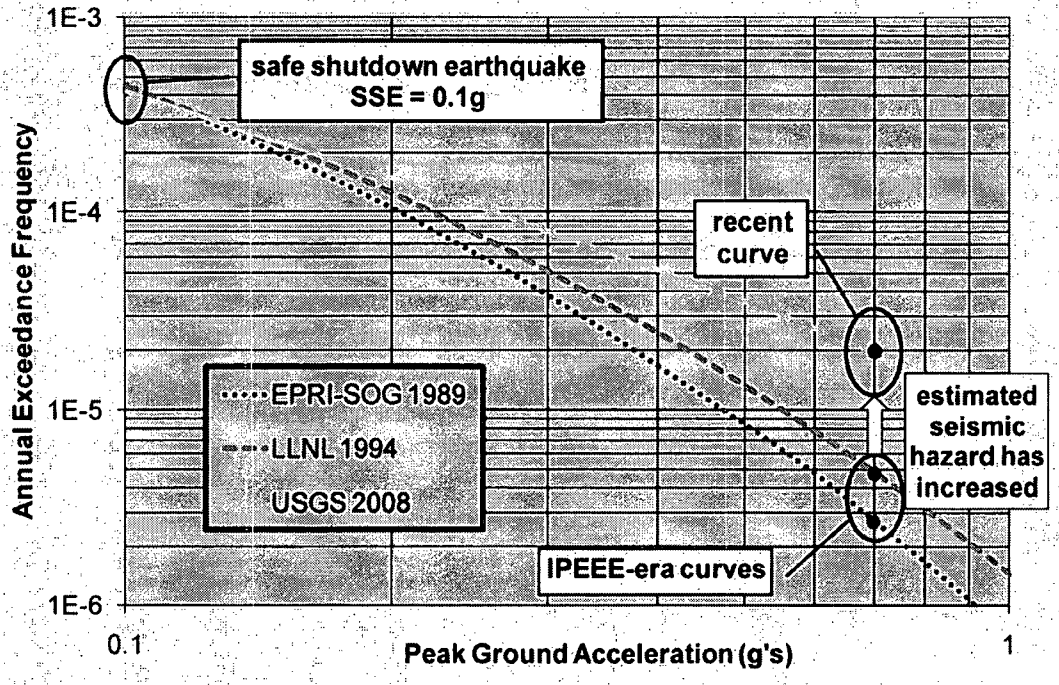
Protecting People and the Environment

What is GI-199 About?

CEUS
- East of Rockies
- 96



Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States (CEUS) on Existing Plants

(1) ESP reviews - higher results

(2) Shown above for a real plant
- Explain AEF
- H(SSE) = constant
- Bigger in ΣSSC

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Safety/Risk Assessment Goals

- Determine, on a generic basis, if the risk associated with GI-199 warrants further investigation for potential imposition of cost-justified backfits.
- Provide a recommendation regarding the next step (i.e., continue to the Regulatory Assessment for identification and evaluation of potential generic, cost-justified backfits, be dropped due to low risk, or have other actions taken outside the Generic Issues Program - GIP).

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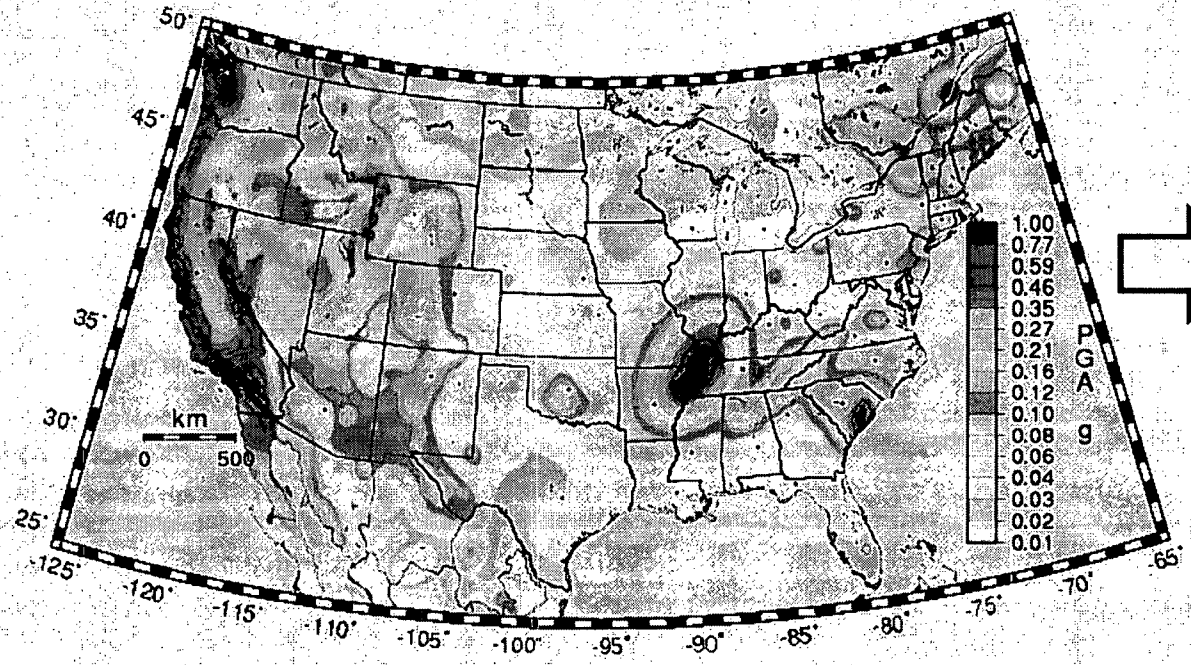
Seismic Hazard Variability

96 plants



Peak ground acceleration — 2% in 50 year probability of exceedance. Source: earthquake.usgs.gov

Need to estimate seismic risk for each CEUS plant

East of the Rocky Mountains

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Safety/Risk Assessment Approach

- For each CEUS plant,
- Combine mean seismic hazard curves
  - 1989: EPRI/SOG (EPRI NP-6395) – many plants
  - 1994: LLNL (NUREG-1488) – all plants
  - 2008: USGS – all plants

  Baseline

- With the mean plant-level fragility curve

  30% SPRA
  70% SMA

- Developed from Individual Plant Examination – External Events (IPEEE) information to estimate seismic core-damage frequency (SCDF).

Not SPRA or SMA Rather, an approach to estimate ΔSCDF

At this stage, used info we have in-house
Need to establish a basis to ask licensees for more info

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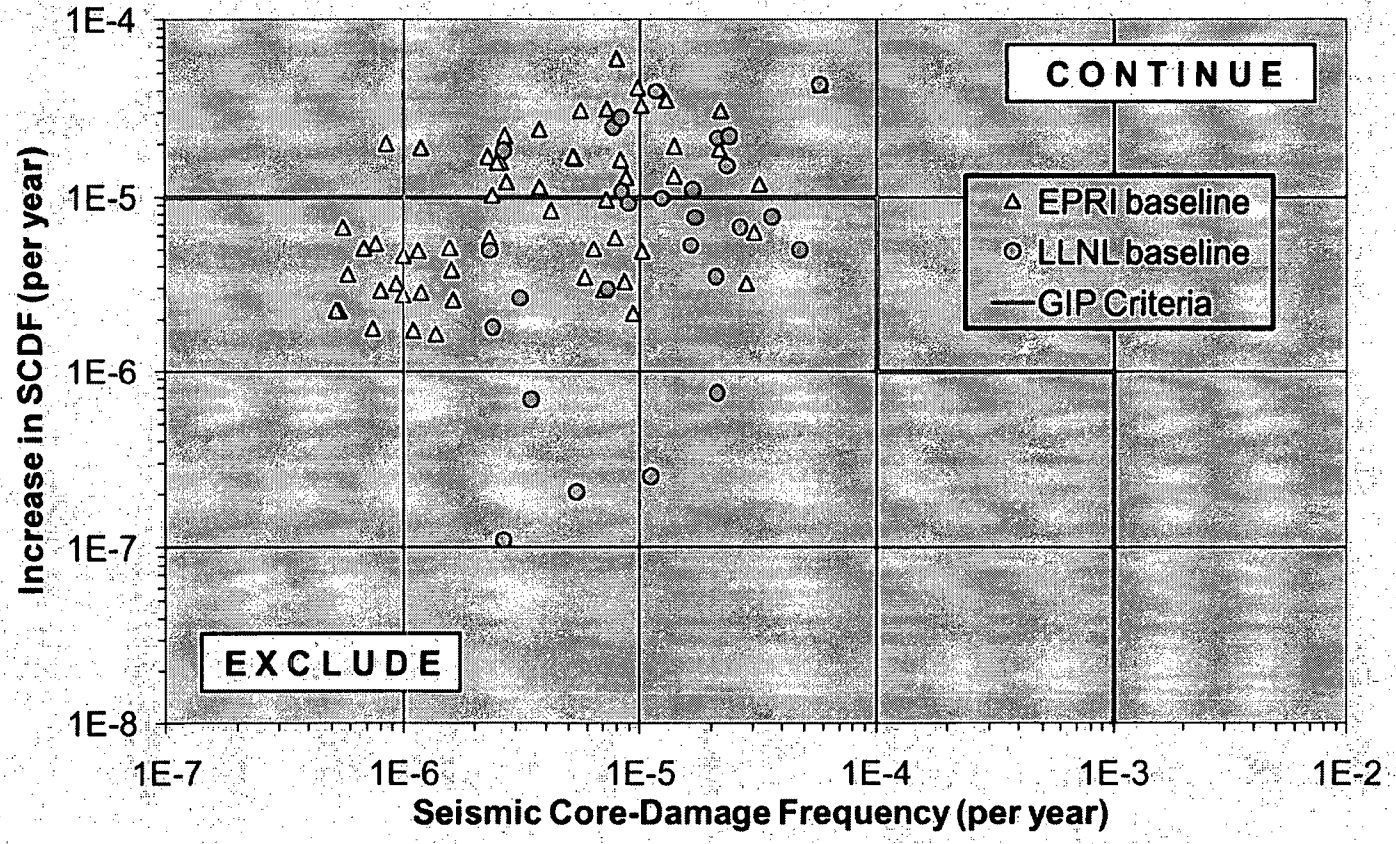
Two baselines: EPRI/SOG & LLNL (IPEEE)
△ based on USGS
Some Δ's CO

Comparison to GIP Criteria



★ 27 = More than a few plants in "continue" Zone

All SCDFs use USGS CLOTs

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Path Forward

- NRR lead with RES support
  - Issue has transitioned from the GI Program to Regulatory Office Implementation
  - Issued Information Notice 2010-018 to inform plants of the GI-199 Safety/Risk Assessment results
  - Develop a generic communication to request needed data
  - RES works with EPRI on method for plants that used Seismic Margins Analysis (SMA)
  - RES develops inputs for GI-199 regulatory analysis under a user need request

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Safety/Risk Assessment Summary

- Operating power plants are safe
- Though still small, some seismic hazard estimates have increased
- Assessment of GI-199 will continue
  - Information is needed to perform regulatory assessments
  - NRC will request the needed information

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P. 25

For More Information

Document	ADAMS Accession Number
October 6, 2010 Meeting Information Package	ML102500242
October 6, 2010 Meeting Presentation Slides	ML102770655
GI-199 Safety/Risk Assessment Package	ML100270582
NRC Information Notice 2010-018 Reactors - Part 50 ISFSI's - Part 72	ML101970221
NRC Information Notice 2010-019	ML102160735

- Part 70: fuel mfg, mixed oxide, enrichment
- Part 76: gaseous diffusion plants
- Part 40: Uranium conversion/deconversion

From: Coyne, Kevin
To: Gonzalez, Michelle
Subject: RE: Scanned Documents
Date: Thursday, March 17, 2011 1:58:00 PM

Thanks!

-----Original Message-----
From: Gonzalez, Michelle
Sent: Thursday, March 17, 2011 1:58 PM
To: Coyne, Kevin
Subject: FW: Scanned Documents

-----Original Message-----
From: CS-RESKODA100-04@100.59 [mailto:CS-RESKODA100-04@100.59]
Sent: Thursday, March 17, 2011 8:38 PM
To: Gonzalez, Michelle
Subject: Scanned Documents

Kodak Scan Station
v3.0.0.5

Murphy, Andrew

From: Murphy, Andrew
Sent: Thursday, March 17, 2011 1:58 PM
To: Rivera-Lugo, Richard
Subject: Accepted: Meeting - NRC ESSI Simulator

AG/ 157

Kauffman, John

From: Ake, Jon
Sent: Thursday, March 17, 2011 1:59 PM
To: Kauffman, John
Subject: RE: Conference call with RI

Yes-- I'm on a call now, can I call you in a few minutes?

From: Kauffman, John
Sent: Thursday, March 17, 2011 11:58 AM
To: Ake, Jon
Subject: RE: Conference call with RI

Jon,
Can you support a 3 p.m. (eastern) telecom with RI and the State of NY today?

From: Ake, Jon
Sent: Thursday, March 17, 2011 1:43 PM
To: Kauffman, John
Subject: RE: Conference call with RI

Hi john-
How are things going?
Where's Marty?

From: Kauffman, John
Sent: Thursday, March 17, 2011 11:40 AM
To: Ake, Jon
Subject: Conference call with RI
Importance: High

Jon,
Please call me or e-mail me, asap. Thanks. JVK

AG/158

From: Federal Computer Week
To: Case, Michael
Subject: The Cloud Transition Checklist: What Agencies Should Know
Date: Thursday, March 17, 2011 2:01:41 PM

This Federal Computer Week Editorial Webcast is sponsored by CDW-G

On February 9, the White House unveiled its Federal Cloud Computing Strategy– outlining a three-step decision-making process for agency Chief Information Officers (CIOs). In order to comply with the federal mandate, 70 agencies across the government will begin their cloud transitions.

Register today for part two of Federal Computer Week's editorial webcast series, **Making Cloud Achievable: The Cloud Transition Checklist**. In this session, our expert panel will cover the process transformation, resource evaluations, and the key role federal IT leadership plays in ensuring successful cloud adoption.

Attendees will also learn:

- What preparations agencies should make before transitioning to a private cloud?
- What security and ownership issues agencies should be aware of?
- How should agencies prepare their systems – including servers, networks and applications – for the transition?
- What resources are necessary?
- What standards and guidelines should be followed?

SPEAKERS

LIVE EDITORIAL WEBCAST

Register Now

Webcast Details

Making Cloud Achievable: The Cloud Transition Checklist

Date:	**April 28, 2011 (Thurs)**
Time:	**2 pm (ET) / 11 am (PT)**
Location:	**Your Computer**
Cost:	**Complimentary**

Presented By:

Our Sponsor:

The **"Making Cloud Achievable"** series consist of **three editorial webcasts** which will demonstrate how to build the right cloud strategy for your agency.

March 29, 2011
"Making Cloud Achievable: To Cloud or Not To Cloud"

AG/159

Angel Santa
Deputy Chief Information Officer, Office of Justice Programs, U.S. Department of Justice

Angel Santa has held management positions at the Department of Housing and Urban Development, Federal Deposit Insurance Corporation and the Department of Education prior to joining OJP. Santa provided direct leadership and guidance from inception through successful completion of several major, mission critical, multi-million dollar development and ...read more.

Moderator:
John Monroe, Editor, *FCW*

John has been covering the federal information technology community for 18 years, both as a reporter and editor.

Register Now

Register now to reserve your space.

All 1105 Government Information Group Editorial Webcasts are free of charge.

April 28, 2011
"Making Cloud Achievable: ***The Cloud Transition Checklist"***

May 19, 2011
"Making Cloud Achievable: ***Building the Cloud, Securing the Cloud"***

Register For All Three Sessions
Register Now

Live Event in Washington DC

After the editorial webcast series you can also attend the **FCW Solutions Seminar-*Cloud Computing Strategies for Operational Efficiency*** planned for mid-June in Washington, DC. *(We'll announce more details about the live event throughout this series.)*

From: Coyne, Kevin
To: Gonzalez, Michelle
Subject: RE: Scanned Documents
Date: Thursday, March 17, 2011 2:03:00 PM

Thanks! Not sure I understood the equations - but they're good to have!

-----Original Message-----
From: Gonzalez, Michelle
Sent: Thursday, March 17, 2011 1:58 PM
To: Coyne, Kevin
Subject: FW: Scanned Documents

These are the notes that were on the back of the pages.

-----Original Message-----
From: CS-RESKODA100-04@100.59 [mailto:CS-RESKODA100-04@100.59]
Sent: Thursday, March 17, 2011 8:35 PM
To: Gonzalez, Michelle
Subject: Scanned Documents

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For a given seismic hazard and β_c, we have 3 sets of fragility parameters:

unanchored UHS	c_{50}, m_{10}, m_5, m_1	
anchored UHS	$c_{50}', m_{10}, m_5, m_1$	$c_{50}' > c_{50}$
proposed	$c_{50}'', m_{10}'', m_5'', m_1''$	$\begin{cases} c_{50}'' \geq c_{50}' \\ m_i'' \geq m_i \end{cases}$

Argument: $SCDF > SCDF' \geq SCDF''$

Look at a single fragility curve for acceleration "a":

$$\Phi\left[\frac{\ln\left(\frac{a}{c_{50} m_i}\right)}{\beta_c}\right] > \Phi\left[\frac{\ln\left(\frac{a}{c_{50}' m_i}\right)}{\beta_c}\right]$$

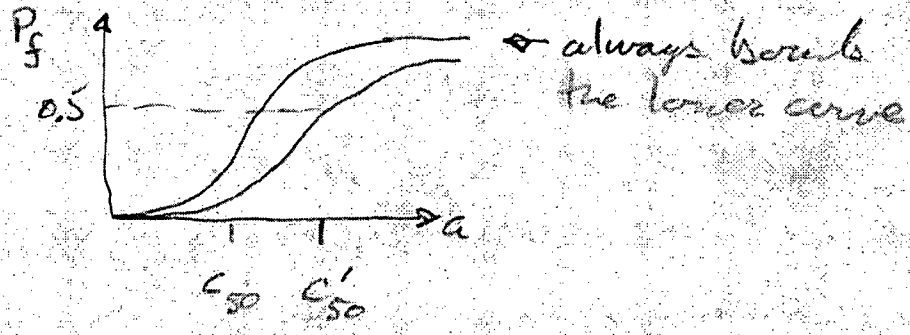
$$\frac{1}{\beta_c}\left(\ln a - \ln c_{50} - \ln m_i\right) > \frac{1}{\beta_c}\left(\ln a - \ln c_{50}' - \ln m_i\right)$$

$$-\ln c_{50} > -\ln c_{50}'$$

$$\ln c_{50} < \ln c_{50}'$$

$$\therefore c_{50} < c_{50}' \quad \text{as expected}$$

This is true at any arbitrary acceleration "a"



$$\Phi\left[\frac{\ln\left(\frac{a}{c_{50}' m_i}\right)}{\beta_c}\right] \geq \Phi\left[\frac{\ln\left(\frac{a}{c_{50}'' m_i''}\right)}{\beta_c}\right]$$

As before, we get:

$$-\ln c_{50}' - \ln m_i \geq -\ln c_{50}'' - \ln m_i''$$

$$0 \geq \ln\left(\frac{c_{50}'}{c_{50}''}\right) + \ln\left(\frac{m_i}{m_i''}\right)$$

From: Federal Computer Week
To: Virgilio, Martin
Subject: The Cloud Transition Checklist: What Agencies Should Know
Date: Thursday, March 17, 2011 2:05:33 PM

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LIVE EDITORIAL WEBCAST

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*"Making Cloud Achievable: **To Cloud or Not To Cloud"***

AG/161

Angel Santa
Deputy Chief Information Officer, Office of Justice Programs, U.S. Department of Justice

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May 19, 2011
*"Making Cloud Achievable: **Building the Cloud. Securing the Cloud"***

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From: GEHA
To: Ruland, William
Subject: Healthy reminders & recipes in your March Health e-Report
Date: Thursday, March 17, 2011 2:05:57 PM

Trouble viewing this email?
Click here to view this email in a browser.

Health e-Report subscriber

GEHA Health e-Report

March 2011

This issue of *Health e-report*® is just like a friendly visit to your doctor – full of helpful advice on your health, including reminders about **the benefit of colorectal cancer screening**, the **availability of food allergy guidelines**, the **effects of too much alcohol**, the **path to healthy eyesight**.

Plus: **when to toss your financial records**, and a helpful **Q&A about FEHB benefits for retirees**.

And, as always, three healthy and tasty recipes to try at home: **tofu and sesame noodle salad**, **cauliflower and chickpea curry with potatoes** and **quick Italian chicken with roasted peppers**.

Photos: Comstock.com

- **Tofu and sesame noodle salad**
- **Cauliflower and chickpea curry with potatoes**
- **Quick Italian chicken with roasted peppers**

Get colorectal cancer screening after turning 50 – If everyone aged 50 years old or older were screened regularly, as many as 60% of deaths from this cancer could be avoided. *CDC* **[Read more]**

Food allergy guidelines available for doctors, patients
Find out why you need to know about the new food allergy guidelines for the United States. *National Institute of Allergy and Infectious Diseases* **[Read more]**

Alcohol eats away at muscle mass
If increasing muscle mass is one of your goals, then think twice before you go out for a night of heavy drinking. *American Council on Exercise* **[Read more]**

Healthy choices today can lead to healthy eyesight in the future
The effects of smoking, poor diet and inactive lifestyle can lead to eye disease and significant vision loss. *Prevent Blindness America* **[Read more]**

Your financial records: what to toss and when
Bank statements, credit card bills and canceled checks can be useful, but how long should you keep them? *FDIC* **[Read more]**

Email Customer Service
Phone: (800) 821-6136

Email Editor
Email Webmaster

AG/162

Q&A: Survivor's coverage, suspended coverage
NARFE's Retirement Benefits Service Department answers questions about FEHB coverage. *NARFE Magazine* **[Read more]**

Read the transcript from our recent online chat with GEHA's president
GEHA President Richard Miles recently answered your questions about GEHA during an online chat. **[Read chat transcript]**

Sign up online for electronic delivery of plan materials
Opt in to GEHA's **GoingGreen** program and you'll receive an email in October with links to the 2012 plan brochure. **[GoingGreen]**

Members can print temporary ID cards online
Lost your GEHA ID card, or need one in a hurry for a covered dependent? No problem. Just register for Member Web Services and then print one from home. **[Print temporary member ID card]**

From: Sanfilippo, Nathan
To: Virgilio, Martin
Subject: Out of Office: Intel from Ops Center - HR message needed
Date: Thursday, March 17, 2011 2:07:36 PM

I will be out of the office on Thursday, March 17th and Friday, March 18th.

For urgent support on NRO or Region II issues, please contact:

Dan Merzke

Thanks,
Nathan

AG/163

From: West, Stephanie
To: Case, Michael
Subject: Mentoring Program
Date: Thursday, March 17, 2011 2:07:34 PM

Mike,

Dorothea Washington would like you to call her regarding the Mentoring Program.

301-415-8409

Stephanie West
Administrative Assistant, RES/DE
US Nuclear Regulatory Commission
ph: 301-251-7619
fax: 301-251-7425
stephanie.west@nrc.gov

AG/164

Zabel, Joseph

Subject: SEP closeout (revised)
Location: HQ-CSB-05C19-18p

Start: Thu 3/17/2011 2:10 PM
End: Thu 3/17/2011 4:25 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: RADB Branch
Required Attendees: Chang, Helen; Zabel, Joseph; Bogle, Sue
Optional Attendees: DAS_Calendar Resource; Bladey, Cindy; Terry, Leslie

ADM/DAS Attendees: H. Chang, S. Bogle
RES Attendee: J. Zabel

Updated time to allow for travel to CSB from OWFN. I had a last-minute meeting schedule with OCM. Thank you for your patience!

2/3/11: Today we will have an abbreviated SEP meeting to discuss the new offers. You will not have to complete everything today, but I want to have another "kickoff" to discuss the results of the protest, etc.

3/17/11: I was late in sending out the review package, so I am moving the caucus date to March 17, Thursday, at 2:00 p.m. We will meet in Church Street, where Joe is stationed, in room CSB-05-C19.

AG/165

From: Xing, Jing
To: Chang, James
Cc: Ibarra, Jose; Coyne, Kevin
Subject: RE: ACTION: OGC request for all Yucca Mt documents
Date: Thursday, March 17, 2011 2:11:58 PM

Thanks a lot James.

Jose, is the information James provided below sufficient to the action? Susan is out of office today.

Jing

From: Chang, James
Sent: Thursday, March 17, 2011 2:06 PM
To: Xing, Jing; Cooper, Susan
Cc: Ibarra, Jose; Peters, Sean
Subject: RE: ACTION: OGC request for all Yucca Mt documents

Jing:
Susan and I supported the YM HLW project. I reviewed the post-closure human reliability analysis related documents. Susan reviewed the pre-closure analysis.

I can only speak only for myself. I looked though the list of records needs to be preserved as stated in ML110740769. I do not hold any information, electronically or hardcopy, included in the list. All documents and information I have are technical. I can produce the information/documents I have within a day.

Susan is in PSA 2011 conference.

James

From: Xing, Jing
Sent: Thursday, March 17, 2011 1:37 PM
To: Cooper, Susan; Chang, James
Cc: Ibarra, Jose
Subject: FW: ACTION: OGC request for all Yucca Mt documents
Importance: High

Susan and James,

Both of you have worked on Yucca Mountain projects before. Could you please email Jose the information required in the following email? Thanks!

Jing

From: Ibarra, Jose
Sent: Thursday, March 17, 2011 1:31 PM
To: Beasley, Benjamin; Ott, William; Coyne, Kevin; Wood, Jeffery; Marksberry, Don; Demoss, Gary; Beasley, Benjamin; Salley, MarkHenry
Subject: FW: ACTION: OGC request for all Yucca Mt documents

Importance: High

BCs,

See that RES has been asked for a quick turn around on Yucca Mountain projects.
I know that Susan has worked on Yucca Mnt before and PRA staff my have worked on this in the past.
I am only the messenger so do not shoot me but the information is needed today.

Jose

From: Dion, Jeanne
Sent: Thursday, March 17, 2011 1:18 PM
To: Rivera-Lugo, Richard; Ibarra, Jose; Armstrong, Kenneth
Cc: Gibson, Kathy; Case, Michael; Coyne, Kevin; Rini, Brett; Sheron, Brian; Uhle, Jennifer; Dempsey, Heather
Subject: ACTION: OGC request for all Yucca Mt documents
Importance: High

Everyone,
I apologize for the quick turnaround for this. The House of Representatives Committee on Oversight and Government Reform has requested all records and information related to Yucca High-level waste repository. See the Attached announcement and ticket.

ACTION
Divisions: Respond to me ASAP **today 3/17** with the approximate number of projects that supported Yucca Mountain.

I don't need all the details yet- I do need to respond to OGC with an approximate date we can produce the documents.

Call me if you any questions

Thanks,

Jeanne Dion
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Jeanne.dion@nrc.gov
301-251-7482

Zabel, Joseph

From: Chang, Helen
Sent: Thursday, March 17, 2011 2:12 PM
To: Zabel, Joseph; Bogle, Sue
Subject: The meeting with the Chairman staff ran a little bit long. I am leaving right now. Thank you! (EOM)

AG/167

From: West, Stephanie
To: Case, Michael
Subject: RE: Next ICSP Meeting April 21st, Arlington, VA
Date: Thursday, March 17, 2011 2:12:03 PM

Done!

Thank you,
Stephanie West

-----Original Message-----
From: Case, Michael
Sent: Wednesday, March 16, 2011 7:33 AM
To: West, Stephanie
Subject: FW: Next ICSP Meeting April 21st, Arlington, VA

Please schedule.

-----Original Message-----
From: mary.donaldson@nist.gov [mailto:mary.donaldson@nist.gov]
Sent: Tuesday, March 15, 2011 2:28 PM
To: Case, Michael
Subject: Next ICSP Meeting April 21st, Arlington, VA

Dear ICSP Colleagues,

The next ICSP meeting will be held jointly with the ANSI GMF on Thursday, April 21st from 9:30am to 12:30pm at the Crown Plaza Washington National Airport Hotel in Arlington, VA.

The GMF is planning to have presentations by several standards developing organizations describing ways they are enabling greater access to Federal agencies during the standards development process. They will also describe a number of ways they are providing regulatory agencies access to standards.

Additional details including agenda and registration information will be provided in advance of the meeting. Please mark your calendars.

Best regards,
Mary Donaldson
ICSP Secretariat

From:	Harper, Kevin
To:	NRR_DE Distribution; Grobe, Jack; Leeds, Eric; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Galloway, Melanie; Giitter, Joseph; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Matheson, Mary
Cc:	Schwarz, Sherry; Tobe, Celestia; Moore, Toye; Balarabe, Sarah; Curran, Bridget; Beckford, Kaydian; Chey, Sonary; Cox, Linda; Jones(NRR), Latoya; Harper, Kevin; Chen, Qiao-Lynn; Ross, Robin
Subject:	March 18, 2011 Delegation of Authority. Meena Khanna acting for P.Hiland
Date:	Thursday, March 17, 2011 2:16:24 PM
Attachments:	March 18, 2011 Delegation of Authority.docx

Please see attached

Thanks,

AG/169

March 17, 2011

MEMORANDUM TO: John A. Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation

FROM: Patrick L. Hiland, Director **/RA/**
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: DELEGATION OF AUTHORITY

During my absence from the office March 18, 2011, I have designated Meena Khanna as Acting Division Director for Division of Engineering (DE). Ms. Khanna is located at O-9E14 and can be reached at 415-2150.

cc: ET/LT
DE Staff

March 17, 2011

MEMORANDUM TO: John A. Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation

FROM: Patrick L. Hiland, Director **/RA/**
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: DELEGATION OF AUTHORITY

During my absence from the office March 18, 2011, I have designated Meena Khanna as Acting Division Director for Division of Engineering (DE). Ms. Khanna is located at O-9E14 and can be reached at 415-2150.

cc: ET/LT
DE Staff

OFFICE	NRR/DE
NAME	P.Hiland
DATE	03/ 17 /2010

OFFICIAL RECORD COPY

From: E&E Publishing, LLC
To: Virgilio, Martin
Subject: March 17 -- Land Letter is ready
Date: Thursday, March 17, 2011 2:18:46 PM

Land Letter

AN E&E PUBLISHING SERVICE

LAND LETTER -- THU., MARCH 17, 2011 -- Read the full edition

1. PARKS: NPS pressured to bend rules for Colo. monument bike race

A proposal to route a professional bicycle race through Colorado National Monument has pitted the National Park Service against some powerful congressional and state leaders who argue that running a stage of the 600-mile road race through the monument would provide an economic boon to the region.

NEW THIS WEEK

2. RENEWABLE ENERGY: Interior chooses 19 'priority projects' for 2011
3. OIL AND GAS: Enviros petition BLM over McCullough Peaks drilling project
4. MINING: Ariz. issues permits for Grand Canyon uranium projects
5. WOLVES: Northern Rockies population plateaus at roughly 1,700, officials say
6. WOLVES: FWS won't appeal court decision on Wyo. management plan
7. PUBLIC LANDS: Energy, conservation issues loom as BLM revises SW Wyo. plan
8. PUBLIC LANDS: Utah, counties have more time to challenge 'wild lands' policy
9. FORESTS: USFS software helps reveal urban trees' ecosystem services
10. BISON: Lawmakers seek USDA support for state-run brucellosis programs

NEWS ROUNDUP

11. OIL AND GAS: EPA seeks greater protections for Wyoming Range drilling project
12. OIL AND GAS: Drilling permit approvals on the rise, Salazar says

AG/179

13. **COAL:** Landowners, enviros prepare appeals of Powder River Basin lease

14. **FORESTS:** Economist suggests cuts to USFS firefighting budget

15. **FORESTS:** USFS suspends Idaho timber sale to study effects on wildlife

---

Get all of the stories in today's Land Letter, plus an in-depth archive with thousands of articles on your issues, detailed Special Reports and much more at http://www.landletter.com

Forgot your passcodes? Call us at 202-628-6500 now and we'll set you up instantly.

To send a press release, fax 202-737-5299 or e-mail editorial@eenews.net.

ABOUT LAND LETTER

Land Letter is written and produced by the staff of E&E Publishing, LLC. For more than 20 years, Land Letter has been the publication professionals have turned to for objective, accurate coverage of natural resource policy issues. From lawsuits over national forest management, to water resource allocation in the West, Land Letter is the source all sides turn to for clear, timely, objective information. Land Letter publishes Thursdays at 2 p.m.

From: Barnes, Valerie
To: Coyne, Kevin
Subject: Done - AL begins
Date: Thursday, March 17, 2011 2:19:27 PM

Worked on reviewing chapters from DaBin's PNNL project this morning.

Thank heavens I'm off now. Concert tonight!

Val

Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 2:21 PM
To: Ibarra, Jose
Subject: RE: ACRS Biennial Review Ticket 2010503

Jose,

I have completed changes for OEGIB.

Ben

From: Ibarra, Jose
Sent: Thursday, March 17, 2011 8:55 AM
To: Salley, MarkHenry; Ott, William; Beasley, Benjamin; Peters, Sean; Marksberry, Don; Demoss, Gary; Wood, Jeffery; Coyne, Kevin
Subject: ACRS Biennial Review Ticket 2010503

BC's,

Please complete by stated due dates Tasks 1, 2, and 3, in order to update the table at http://portal.nrc.gov/edo/res/OfficeWide/ResQuality/ACRS%20Program%20Reviews/Forms/AllItems.aspx. Send me an e-mail when you have completed your part. Note that DRA has only to do the appropriate updates in Tasks 1, 2, and 3. The rest of the Tasks are listed for your information. These efforts are associated with ticket RES 2010503, ACRS Biennial Review.

- Task 1 (March 28): Enter the relevant technical area from the dropdown list provided by ACRS. (DE/DRA/DSA)
- Task 2 (March 28): Review the text in the Scope, Regulatory Use, and Objective fields to ensure it's up to date. If those fields are modified, add a "Yes" to Column O, so that the new information can be put into ROMA. (DE/DRA/DSA)
- Task 3 (March 28): Review the Current User Need entry and enter the correct value in the Proposed User Need field. (DE/DRA/DSA)
- Task 4 (March 30): Sort the final inputs by technical area and provide to FO for review (B. Rini)
- Task 5 (April 1): Send data on which projects are under each technical area to ACRS (B. Rini)
- Task 6 (April 15): Work with PMDA to get user need info and other JCN background info into ROMA (B. Rini)

Thanks,
Jose

AG/172

From: Littlejohn, Jennene
To: Coyne, Kevin
Cc: Coe, Doug; Davis, Chon; Bamford, Lisa
Subject: RE: 3rd QTR APP Update Reminder
Date: Thursday, March 17, 2011 2:22:30 PM

Thanks Kevin.

From: Coyne, Kevin
Sent: Thursday, March 17, 2011 2:08 PM
To: Littlejohn, Jennene
Cc: Coe, Doug; Davis, Chon; Bamford, Lisa
Subject: RE: 3rd QTR APP Update Reminder

Jennene –

Thanks for the update on this. We'll need to keep in mind that the ROMA spending plan alone may not give us the full picture for the APP – we'll still the PMs to adjust the APP information based on planned contract modifications and either catch-up spending do to previous under spending (or future under spending due to acceleration of the work in the past).

Kevin

From: Littlejohn, Jennene
Sent: Thursday, March 17, 2011 11:21 AM
To: Kuritzky, Alan; Beasley, Benjamin; Coyne, Kevin; Demoss, Gary; Ott, William; Peters, Sean; Salley, MarkHenry
Cc: Coe, Doug
Subject: 3rd QTR APP Update Reminder
Importance: High

Good Morning BC's

This email is a follow up to Monday's DRA Management meeting, We are asking all of the branch chiefs to have their PM's update their spending plans NLT Tuesday March 22,2011. We just received an email from PMDA indicating that we have a very short turn over with updating the APP. Chon and I will be meeting with each Branch Chief on Wednesday March 23,2011 to discuss their branches needs.

If you have any questions please feel free to contact Chon or Myself.

Thank you,
Jennene Littlejohn
Management Analyst
Office-301-251-7925
Fax-301-251-7434
jennene.littlejohn@nrc.gov
Our Truest Life is when we are in dreams awake.

AG/173

From:	Chey, Sonary
To:	Lund, Louise; Lee, Samson; Ruland, William; DLRCalendar Resource
Cc:	Balarabe, Sarah
Subject:	NRR's CNWRA funding going forward

When: Thursday, March 17, 2011 2:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: 11B06

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*~*

AG/174

From: GovSec 2011 Expo & Conference
To: Case, Michael
Subject: Hear D.C. Assistant Police Chief Diane Groomes
Date: Thursday, March 17, 2011 2:34:07 PM

GovSec 2011

Ensure the Safety of Your Personnel!

Recognize & Respond to Mentally Disturbed Persons

Did you know there are over 50 different types of mental disorders that you--as law enforcement and security officials on the front lines--could encounter on any given day?

When responding to a situation it is difficult to recognize the type of mental disorder a person is dealing with and how you should respond.

Ensure the safety of your personnel: Attend this session--for just $25:

Law Enforcement Response to Mentally Disturbed Persons or "MOs" (LE-5)
featuring D.C. Assistant Police Chief Diane Groomes
Thursday, March 31st at 11:45am

Hear first-hand accounts and experiences from:

- **Jeffrey C. Wilkins**, Department of Veterans Affairs (Moderator)
- **Diane Groomes**, Metropolitan Police Department
- **Roger Kelly**, CIA Police

PLUS, learn common disorders frequently encountered by law enforcement professionals and techniques to assist in dealing with these issues.

Use Priority Code: NX1G52

P.S. All Law Enforcement sessions are just $25 each when you register before March 29--check out the full track here!

AG/175

Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 2:39 PM
To: Lane, John
Subject: FW: EU/JRC OEF Clearinghouse and Topical Reports

From: Dehn, Jeff
Sent: Thursday, March 17, 2011 12:05 PM
To: Beasley, Benjamin
Subject: EU/JRC OEF Clearinghouse and Topical Reports

Ben,

Here is a little bit of info we discussed. The clearinghouse Michel Bieth was mentioning lives here:
https://clearinghouse-oef.jrc.ec.europa.eu/

Some summaries of topical reports are here:
https://clearinghouse-oef.jrc.ec.europa.eu/documents-1/summary-reports-on-selected-topical-operational-experience-reports

I'm guessing they don't post the full reports publically since they're resource intensive for the "full members" to create.

I'll still ask him to send over whatever info he can, maybe one sample full report, to help us help them.

Thanks,
Jeff

Jeff Dehn

International Relations Specialist
Office of Nuclear Regulatory Research (RES)
US Nuclear Regulatory Commission
jeff.dehn@nrc.gov
301-251-7672
C-6D22

AG/176

Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 2:42 PM
To: Ibarra, Jose
Subject: RE: ACTION: OGC request for all Yucca Mt documents

Nothing in OEGIB related to Yucca Mountain.

From: Ibarra, Jose
Sent: Thursday, March 17, 2011 1:31 PM
To: Beasley, Benjamin; Ott, William; Coyne, Kevin; Wood, Jeffery; Marksberry, Don; Demoss, Gary; Beasley, Benjamin; Salley, MarkHenry
Subject: FW: ACTION: OGC request for all Yucca Mt documents
Importance: High

BCs,

See that RES has been asked for a quick turn around on Yucca Mountain projects.
I know that Susan has worked on Yucca Mnt before and PRA staff my have worked on this in the past.
I am only the messenger so do not shoot me but the information is needed today.

Jose

From: Dion, Jeanne
Sent: Thursday, March 17, 2011 1:18 PM
To: Rivera-Lugo, Richard; Ibarra, Jose; Armstrong, Kenneth
Cc: Gibson, Kathy; Case, Michael; Coyne, Kevin; Rini, Brett; Sheron, Brian; Uhle, Jennifer; Dempsey, Heather
Subject: ACTION: OGC request for all Yucca Mt documents
Importance: High

Everyone,
I apologize for the quick turnaround for this. The House of Representatives Committee on Oversight and Government Reform has requested all records and information related to Yucca High-level waste repository. See the Attached announcement and ticket.

ACTION
Divisions: Respond to me ASAP **today 3/17** with the approximate number of projects that supported Yucca Mountain.

I don't need all the details yet- I do need to respond to OGC with an approximate date we can produce the documents.

Call me if you any questions

Thanks,

Jeanne Dion
Technical Assistant (Acting)
U.S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Jeanne.dion@nrc.gov
301-251-7482

AG/177

From:	Harper, Kevin
To:	NRR_DE Distribution; Grobe, Jack; Leeds, Eric; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Galloway, Melanie; Giitter, Joseph; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Matheson, Mary
Cc:	Schwarz, Sherry; Tobe, Celestia; Moore, Toye; Balarabe, Sarah; Curran, Bridget; Beckford, Kaydian; Chey, Sonary; Cox, Linda; Jones(NRR), Latoya; Harper, Kevin; Chen, Qiao-Lynn; Ross, Robin
Subject:	March 18, 2011 Delegation of Authority. George Wilson Acting for Patrick Hiland
Date:	Thursday, March 17, 2011 2:43:31 PM
Attachments:	March 18, 2011 Delegation of Authority.docx

Please ignore the previous delegation of authority memo, George Wilson will be acting Division Director doe DE, Friday March 18, 2011.

Thanks

AG/178

March 17, 2011

MEMORANDUM TO: John A. Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation

FROM: Patrick L. Hiland, Director **/RA/**
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: DELEGATION OF AUTHORITY

During my absence from the office March 18, 2011, I have designated George Wilson as Acting Division Director for Division of Engineering (DE). Mr. Wilson is located at O-9E12 and can be reached at 415-1711.

cc: ET/LT
DE Staff

March 17, 2011

MEMORANDUM TO: John A. Grobe, Deputy Director
for Engineering and Corporate Support
Office of Nuclear Reactor Regulation

FROM: Patrick L. Hiland, Director **/RA/**
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: DELEGATION OF AUTHORITY

During my absence from the office March 18, 2011, I have designated George Wilson as Acting Division Director for Division of Engineering (DE). Mr. Wilson is located at O-9E12 and can be reached at 415-1711.

cc: ET/LT
DE Staff

OFFICE	NRR/DE
NAME	P.Hiland
DATE	03/ 17 /2010

OFFICIAL RECORD COPY

Kauffman, John

From: Manoly, Kamal
Sent: Thursday, March 17, 2011 2:49 PM
To: Beasley, Benjamin; Kauffman, John
Subject: RE: GI-199 Comm. Plan

What is P8??

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 2:31 PM
To: Kauffman, John; Manoly, Kamal
Subject: RE: GI-199 Comm. Plan

Kamal,

We just discovered that John's addition is not available in P8 but is available in old ADAMS. FYI.

Ben

From: Kauffman, John
Sent: Thursday, March 17, 2011 1:49 PM
To: Manoly, Kamal
Cc: Beasley, Benjamin
Subject: GI-199 Comm. Plan

Kamal,
I have made the changes in the Comm. plan that you requested (ADAMS ML081850477). I suggest you "vet" these changes with your management and when you are happy with the changes, issue an update to the communications team, including OPA. Thanks. JVK

AG1179

Owen, Lucy

From: Mehrhoff, Vivian
Sent: Thursday, March 17, 2011 2:53 PM
To: Collins, Elmo; Howell, Art; Kennedy, Kriss; Pruett, Troy; Vegel, Anton; Josey, Jeffrey; Chambers, Michael; Gaddy, Vincent; Hagar, Bob; Kumana, Rayomand; Elam, Amy; Dricks, Victor; Uselding, Lara; Wilkins, Lynnea; Hay, Michael; Herrera, Marisa; Fuller, Karla; Weil, Jenny; Salley, MarkHenry
Cc: Mateychick, John; Alferink, Steven; Uribe, Eduardo; Watkins, John; George, Gerond; Runyan, Michael; Loveless, David; OKeefe, Neil
Subject: CNS2010006-RP-JMM.docx
Attachments: CNS2010006-RP-JMM.docx

This report can also be found in **ADAMS: ML110760579**

Thank you.

Vivian L Mehrhoff
Administrative Assistant
Division of Reactor Safety
Region IV - Arlington, Texas 76011
817-860-8166

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

"Death is not the greatest loss in life. The greatest loss is what dies inside us while we live." ...Norman Cousins

AG/180

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

March 17, 2011

EA 11-024

Brian J. O'Grady, Vice President-Nuclear
and Chief Nuclear Officer
Nebraska Public Power District
Cooper Nuclear Station
72676 648A Avenue
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000298/2010006; PRELIMINARY WHITE FINDING

Dear Mr. O'Grady:

On November 5, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Cooper Nuclear Station. The enclosed inspection report documents the inspection results, which were discussed in an exit meeting on March 14, 2011, with Mr. D. Buman, Director of Engineering, and other members of your staff.

During this inspection, the NRC staff examined activities conducted under your license as they relate to public health and safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has identified two findings that were evaluated for risk under the Significance Determination Process. Violations were associated with each of the findings.

The attached report discusses a finding that was preliminarily determined to be a White finding, a finding with low-to-moderate increased safety significance which may require additional NRC inspections. This finding was assessed based on the best available information, including influential assumptions, using the applicable Significance Determination Process (SDP). As described in Section 1R05.01 of the attached report, this finding involves the failure to verify that procedure steps to safely shutdown the plant in the event of a fire would actually reposition three motor operated valves to the required positions and the concurrent failure to address a previous finding that involved the same procedure steps. This finding has preliminary low-to-moderate safety significance because it involves multiple fire areas and risk factors that were not dependent on specific fire damage. The scenarios of concern involve larger fires in specific areas of the plant which trigger operators to implement fire response procedures to place the plant in a safe shutdown condition. Since performing some of those actions using the

procedures as written would not have aligned three valves to their required positions, this would challenge the operators' ability to establish adequate core cooling. This finding does not represent an immediate safety concern because your staff promptly changed the procedures to locally reposition position the valves.

This finding is also an apparent violation of NRC requirements and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's web site at http://www.nrc.gov/about-nrc/regulatory/ enforcement/enforce-pol.html.

In accordance with Inspection Manual Chapter 0609, we intend to complete our evaluation using the best available information and issue our final determination of safety significance within 90 days of this letter. The significance determination process encourages an open dialog between the staff and the licensee; however the dialogue should not impact the timeliness of the staff's final determination. Before we make a final decision on this matter, we will hold a Regulatory Conference to provide you an opportunity to present to the NRC your perspectives on the facts and assumptions used by the NRC to arrive at the finding and assess its significance. The Regulatory Conference should be held within 30 days of the receipt of this letter and we encourage you to submit supporting documentation at least one week prior to the conference in an effort to make the conference more efficient and effective. This Regulatory Conference will be open for public observation.

At the Regulatory Conference, in addition to providing your perspectives on the finding and the significance, please be prepared to discuss (1) the cause(s) for the performance deficiency, (2) corrective actions taken or planned for the performance deficiency, and (3) the reasons why your corrective actions for Violation 05000298/2008008-01, a finding with low-to-moderate safety significance, were not adequate to verify that the procedure would have worked as intended.

Please contact Neil O'Keefe at (817) 860-8137 within 10 days of receipt of this letter to schedule a date for the Regulatory Conference. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision. The final resolution of this matter will be conveyed in separate correspondence.

Because the NRC has not made a final determination for this matter, no Notice of Violation is being issued for this inspection finding at this time. In addition, please be advised that the characterization of the apparent violation described in the enclosed inspection report may change as a result of further NRC review.

Based on the results of this inspection, the NRC has also identified one additional issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because it was entered into your corrective action program, the NRC is treating the finding as a noncited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy. The NCV is described in the subject inspection report. If you contest the noncited violation or the significance of the noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region IV; (2) the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector at

Cooper Nuclear Station. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Resident Inspector at Cooper Nuclear Station. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Anton Vegel, Director
Division of Reactor Safety

Docket No. 50-298
License No. DPR-46

Enclosure: Inspection Report No. 05000298/2010006
w/Attachments: Supplemental Information
Final Significance Determination Summary

cc w/enclosure:
Distribution via ListServ for CNS

Electronic distribution by RIV:
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Deputy Regional Administrator (Art.Howell@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
DRP Deputy Director (Troy.Pruett@nrc.gov)
DRS Director (Anton.Vegel@nrc.gov)
DRS Deputy Director (Vacant)
Senior Resident Inspector (Jeffrey.Josey@nrc.gov)
Resident Inspector (Michael.Chambers@nrc.gov)
Branch Chief, DRP/C (Vincent.Gaddy@nrc.gov)
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Branch Chief, DRS/TSB (Michael.Hay@nrc.gov)
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Regional Counsel (Karla.Fuller@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
RES Branch Chief (MarkHenry.Salley@nrc.gov)
OEMail Resource@nrc.gov
OEWEB Resource
OEDO RIV Coordinator (James.Trapp@nrc.gov)
DRS/TSB STA (Dale.Powers@nrc.gov)

R:\ ADAMS ML110760579

ADAMS: □ No □ Yes	□ SUNSI Review Complete	Reviewer Initials:
	□ Publicly Available	□ Non-Sensitive
	□ Non-publicly Available	□ Sensitive

RIV/DRS/EB2	RIV/DRS/EB2	RIV/DRS/EB2	RIV/DRS/EB2	RIV/DRS/EB1	RIV/DRS/SRA
J.Mateychick	S. Alferink	E. Uribe	J. Watkins	G. George	M. Runyan
/RA/	***/RA/***	***/RA/***	***/RA/***	***/RA/***	***/RA/***
03/14/2011	03/11/2011	03/10/2011	03/10/2011	03/14/2011	03/11/2011
RIV/DRS/SRA	RIV/DRP/BC	RIV/DRS/BC	NRR/OE Coord	ACES/OE	RIV/DRS/Director
D. Loveless	V. Gaddy	N. O'Keefe	M. Ashley	R. Kellar	A. Vegel
/RA/	**/RA/**	**/RA/**			
03/11/2011	03/15/2011	03/14/2011			

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-298
License:	DPR-46
Report Nos.:	05000298/2010006
Licensee:	Nebraska Public Power District
Facility:	Cooper Nuclear Station
Location:	72676 648A Avenue Brownville, NE 68321
Dates:	October 18, 2010 through March 14, 2011
Team Leader:	J. Mateychick, Senior Reactor Inspector, Engineering Branch 2
Inspectors:	S. Alferink, Reactor Inspector, Engineering Branch 2 E. Uribe, Reactor Inspector, Engineering Branch 2 J. Watkins, Reactor Inspector, Engineering Branch 2 G. George, Reactor Inspector, Engineering Branch 1
Approved By:	Anton Vegel, Director Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000298/2010006; October 18, 2010 – March 14, 2011, Nebraska Public Power District; Cooper Nuclear Station: Triennial Fire Protection Team Inspection.

This report covers a two week fire protection team inspection, follow-up inspection and significance determination effort by specialist inspectors from Region IV. One finding was identified with an associated apparent violation, which was preliminary determined to have low-to-moderate safety significance (White). Two Green findings, which were noncited violations (NCVs), were also identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process (SDP) does not apply may be Green or be assigned a severity level after NRC management review. The crosscutting aspects, where applicable, were determined using Inspection Manual Chapter 0310, "Components Within the Cross Cutting Areas." The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Apparent Violation. An apparent violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," and Criterion XVI, "Corrective Action," with a preliminary white significance, was identified for failure to ensure that some steps contained in Emergency Procedures at Cooper Nuclear Station would work as written and the concurrent failure to assure that a condition adverse to quality was promptly identified and corrected, respectively. Specifically, steps in Emergency Procedure 5.4 POST-FIRE, "Post-Fire Operational Information," and Emergency Procedure 5.4 FIRE-S/D, "Fire Induced Shutdown From Outside Control Room," intended to reposition motor operated valves from the motor starter cabinet, would not have worked as written because the steps were not appropriate for the configuration of three valve motor starters. This finding was entered into the licensee's corrective action program under Condition Reports CR-CNS-2010-08193 and CR-CNS-2010-08242, however the licensee failed to adequately correct the procedure and the procedure remained unworkable.

  The failure to verify that procedure steps needed to safely shutdown the plant in the event of a fire would actually reposition motor operated valves to the required positions and the simultaneous failure to address the previous finding that the same procedure steps would not work as written, was a performance deficiency. This finding was more than minor safety significance because it impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences. This finding affected both the procedure quality and protection against external factors (such as fires) attributes of this cornerstone objective. This finding was determined to have a preliminary low-to-moderate safety significance (White) during a Phase 3 evaluation using best available information. This problem,

which has existed since 1997, involves risk factors that were not dependent on specific fire damage. The scenarios of concern involve larger fires in specific areas of the plant which trigger operators to implement fire response procedures to place the plant in a safe shutdown condition. Since some of those actions could not be completed using the procedures as written, this would challenge the operators' ability to establish adequate core cooling. This finding had a crosscutting aspect in the Corrective Action Program component, under the Problem Identification and Resolution area (P.1(c) - Evaluation), because the licensee failed to properly evaluate the circuit operation or conduct verification tests to ensure that corrective actions for a previous violation would reliably position the three valves. Upon identification of this issue, both emergency procedures were revised to assure correct valve alignment by manually operating the valve locally. Therefore, this finding does not represent a current safety concern. (Section 1R05.1)

- Green. A noncited violation of 10 CFR 50.65(a)(2) was identified for the failure to monitor the performance of the emergency lighting system against the established performance criteria. The licensee included the emergency lighting system in the Maintenance Rule program and specified that the emergency light batteries must be capable of 8 hours of operation, as required by 10 CFR Part 50, Appendix R, Section III.J. The team identified that the licensee did not perform tests that demonstrated the capability of the emergency lights to last for 8 hours; therefore, the licensee failed to monitor the performance of the emergency lights against the established performance criteria. This finding was entered into the licensee's corrective action program under Condition Reports CR-CNS-2010-08014 and CR-CNS-2010-08250.

  The failure to monitor the performance of the emergency lighting system against the performance criteria stated in the Maintenance Rule program was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to ensure that emergency lights would last for 8 hours could adversely affect the ability of operators to perform all of the manual actions required to support safe shutdown in the event of a fire. The significance of this finding was evaluated using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because the performance deficiency affected fire protection defense-in-depth strategies involving post fire safe shutdown systems. The finding was assigned a low degradation rating since the finding minimally impacted the performance and reliability of the fire protection program element. Specifically, the team determined that the licensee's preventive maintenance strategy provided reasonable assurance that the emergency lights would last sufficiently long for the operators to perform the most time-critical manual actions required to support safe shutdown in the event of a fire. The team also noted that operators were required to obtain and carry flashlights. Therefore, the finding screened as having very low safety significance (Green). This finding had a crosscutting aspect in the area of Human Performance associated with Decision Making because the licensee failed to identify possible unintended consequences of the decision to change the maintenance program for the emergency lights. Specifically, the licensee failed to identify that deleting

emergency light testing impacted Maintenance Rule performance monitoring. [H.1(b)] (Section 1R05.8)

B. Licensee-Identified Violations

None

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R05 Fire Protection (71111.05TTP)

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure 71111.05TTP, "Fire Protection-NFPA Transition Period (Triennial)," at Cooper Nuclear Station. The licensee committed to adopt a risk informed fire protection program in accordance with National Fire Protection Association Standard 805 (NFPA-805), but had not yet completed the program transition. The inspection team evaluated the implementation of the approved fire protection program in selected risk-significant areas, with an emphasis on the procedures, equipment, fire barriers, and systems that ensure the post-fire capability to safely shut the plant down.

Inspection Procedure 71111.05TTP requires selecting three to five fire areas for review. The inspection team used the fire hazards analysis section of the Cooper Nuclear Station Individual Plant Examination of External Events to select the following five risk-significant fire zones (inspection samples) for review:

- Fire Area I / Fire Zone 2A — Control Rod Drive Units - North, Reactor Building Elevation 903' 6"
- Fire Area I / Fire Zone 5B — Reactor Motor Generator Set Area, Reactor Building Elevation 976' 0"
- Fire Area II / Fire Zone 3A — Switchgear Room 1F, Reactor Building Elevation 931' 6"
- Fire Area IX / Fire Zones 14A — Diesel Generator 1A Room, Diesel Generator Building Elevation 903' 6"
- Fire Area IX / Fire Zones 14C — Diesel Oil Day Tank Room, Diesel Generator Building Elevation 903' 6"

The inspection team evaluated the licensee's fire protection program using the applicable requirements, which included plant Technical Specifications, Operating License Condition 2.C.(5); NRC safety evaluations; 10 CFR 50.48; Branch Technical Position 9.5-1; and 10 CFR 50, Appendix R. The team also reviewed related documents that included the Final Safety Analysis Report (FSAR), Section 9.5; the fire hazards analysis; and the post-fire safe shutdown analysis.

Specific documents reviewed by the team are listed in the attachment. Five fire area inspection samples were completed. Also, one B.5.b strategy review sample was completed.

.1 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the piping and instrumentation diagrams, safe shutdown equipment list, safe shutdown design basis documents, and the post fire safe shutdown analysis to verify that the licensee properly identified the components and systems necessary to achieve and maintain safe shutdown conditions for fires in the selected fire areas. The team observed walkdowns of the procedures used for achieving and maintaining safe shutdown in the event of a fire to verify that the procedures properly implemented the safe shutdown analysis provisions.

For each of the selected fire areas, the team reviewed the separation of redundant safe shutdown cables, equipment, and components located within the same fire area. The team also reviewed the licensee's method for meeting the requirements of 10 CFR 50.48; Branch Technical Position 9.5-1, Appendix A; and 10 CFR Part 50, Appendix R, Section III.G. Specifically, the team evaluated whether at least one post-fire safe shutdown success path would remain free of fire damage in the event of a fire. In addition, the team verified that the licensee met applicable license commitments.

b. Findings

Introduction. An apparent violation of 10 CFR Part 50, Appendix B, Criterion V and Criterion XVI, with a preliminary White significance, was identified for the repeated failure to ensure that some steps contained in emergency procedures at Cooper Nuclear Station would work as written. Specifically, steps in Emergency Procedure 5.4 POST-FIRE, "Post Fire Operational Information," and Emergency Procedure 5.4 FIRE-S/D, "Fire Induced Shutdown From Outside Control Room," intended to reposition motor operated valves at the motor starter cabinet, would not have worked as written because the steps were not appropriate for the configuration of the motor starters.

Description. Post-fire safe shutdown strategies at the Cooper Nuclear Station require equipment operations to be performed in accordance with one of two emergency procedures. For most fire areas, plant shutdown is performed using Emergency Procedure 5.4 POST-FIRE, "Post-Fire Operational Information," Revision 37, in conjunction with other plant procedures. For areas where fires might necessitate evacuation of the control room, alternative shutdown is performed using Emergency Procedure 5.4 FIRE-S/D, "Fire Induced Shutdown From Outside the Control Room," Revision 38.

The team performed a walkthrough of Emergency Procedure 5.4 POST-FIRE for selected fire areas by observing plant operators simulate actions required by the procedure. This procedure required operators to reposition multiple motor-operated valves (MOVs) from each valve's motor starter cabinet. The procedure steps direct operators to open the motor starter cabinet, remove the control power fuses, then press designated contactors for a specified amount of time to reposition the valve to the required position.

The team was concerned that some of the procedure steps might not be reliably performed by the operators because bulky electrical safety gloves might not allow access to recessed contactors. When the licensee attempted to demonstrate their method, they identified that it would not work for one type of contactor. The internal configuration of the contactor would not complete the power circuit by depressing it. The manufacturer describes the design as having "direct magnet drive with positive pull-in of contactors." Since control power was removed by pulling fuses before operating the contactors, the magnet system would not engage the power contacts to the valve motor. The inspectors noted that the operator performing the procedure steps would have no indication that the valve(s) did not reposition. Because the procedures do not specifically require checking the valve positions for most fire locations, the failure to reposition would not be readily apparent.

The three valves with this type of contactor were residual heat removal (RHR) system valves RHR-MO-25A and RHR-MO-25B, Train A and B Inboard Injection Isolation Valves, and reactor recirculation (RR) system valve RR-MO-53A, Reactor Recirculation A Pump Discharge Valve. The procedural deficiency in Emergency Procedure 5.4 POST-FIRE impacted the response to fires in 11 fire areas, each involving one valve. One of the valves, RHR-MO-25B, is operated in the same manner during alternative shutdown in accordance with Emergency Procedure 5.4 FIRE-S/D, which contained the same procedural deficiency, for fires in two additional fire areas. The 13 affected fire areas are listed below:

Fire Area	
CB-A	Control Building Reactor Protection System Room 1A, Seal Water Pump Area, and Hallway
CB-A-1	Control Building Division 1 Switchgear Room and Battery Room
CB-B	Control Building Division 2 Switchgear Room and Battery Room
CB-C	Control Building Reactor Protection System Room 1B
CB-D	Control Room, Cable Spreading Room, Cable Expansion Room, and Auxiliary Relay Room
RB-DI (SE)	Reactor Building RHR Pump B/HPCI Pump Room
RB-DI (SW)	Reactor Building South/Southwest 903, Southwest Quad 889 and 859, and RHR Heat Exchanger Room B
RB-FN	Reactor Building 903, Northeast Corner
RB-J	Reactor Building Critical Switchgear Room 1F
RB-K	Reactor Building Critical Switchgear Room 1G
RB-M	Reactor Building North/Northwest 931 and RHR Heat Exchanger Room A
RB-N	Reactor Building South/Southwest 931 and RHR Heat Exchanger Room B
TB-A	Turbine Building (multiple areas)

Opening either valve RHR-MO-25A or valve RHR-MO-25B is necessary to establish alternative shutdown cooling. Alternative shutdown cooling involves using a train of RHR to take suction from the suppression pool, inject the low pressure water to flood the reactor vessel, and recirculate the water through the safety relief valves (SRVs) back to the suppression pool. Establishing alternative shutdown cooling can be very time-sensitive. If high-pressure coolant injection (HPCI) is not available, the licensee

provided calculations that show that core damage can occur in as little as 15 minutes after valve RHR-MO-25B fails to open.

Valve RR-MO-53A is the discharge isolation valve for Reactor Recirculation Pump 1-A. This valve is only required for cold shutdown. For some fire areas, the normal shutdown cooling mode of RHR system operation was credited in the fire safe shutdown analysis to be available. In shutdown cooling mode, the RHR system takes suction from the suction pipe of reactor recirculation system loop "A". The reactor coolant is then cooled and returned to a reactor recirculation loop discharge pipe. The failure to close either valve RR-MO-53A or RR-MO-43A would result in a short circuit of the shutdown cooling flow, bypassing the reactor vessel. The cool down from hot shutdown conditions and the transition to normal shutdown cooling allows time to close either valve RR-MO-53A or RR-MO-43A using local manual operation.

In 2004, a related but separate violation (NCV 05000298/2004008-01) was issued for failure to protect cables from fire damage for MOVs required to be available for post fire safe shutdown. The licensee committed to adopt a risk-informed fire protection program in accordance with 10 CFR 50.48(c) and NFPA-805, and planned to address the 2004 violation through their NFPA-805 conversion. To be able to delay correcting the 2004 violation, the licensee was required to verify that the compensatory measures for the violation (the operator manual actions) were adequate to ensure safety, in this case to be able to safely shut the plant down in the event of a fire.

Inspection Report 05000298/2004008 noted reliability concerns with the method of operating the MOVs. These included the fact that the contactors were not labeled to allow operators to know which contactors the procedure instructed them to operate, no indication was available at the motor starter cabinet for the operator to know the valves had reached their required position, and valve position was not verified locally at the valves. As part of corrective action, the licensee installed "open" and "closed" labels near contactors in the motor starter cabinets.

In 2007, inspectors identified that some of the operator manual actions used as compensatory measures for the 2004 violation would not have repositioned 10 of the MOVs. The procedures did not account for the fact that these 10 MOVs had different motor starter circuits than most valves. Despite installing labels following the 2004 violation, the licensee failed to recognize that these 10 MOVs had a more complex circuit design which required two or three contactors to be operated at the same time, while the procedures only required operating one "open" or one "close" contactor. A White finding with an associated violation (Violation 05000298/2008008-01, EA 07-204) was issued for having an inadequate procedure and failing to verify that the procedure would work.

Inspection Report 05000298/2008007 again documented the reliability concerns that there were no valve position indications at the MOV motor starter cabinets, and the procedures did not direct local valve position checks. Additional reliability concerns were also documented concerning the adequacy of the procedures and the instrumentation available to diagnose the failure of an MOV to reposition.

The licensee took corrective actions to change and verify the procedures to address the 2008 finding; however the licensee's efforts again failed to identify details of the

electrical design which would result in the procedure steps not repositioning three MOVs.

Analysis. The failure to verify that procedure steps needed to safely shutdown the plant in the event of a fire would actually reposition motor operated valves to the required positions, and to address a previous finding that the same procedure steps would not work as written, was a performance deficiency. This performance deficiency is of more than minor safety significance because it impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences. This finding affected both the procedure quality and protection against external factors (such as fires) attributes of this cornerstone objective.

The significance determination process (SDP) Phase 1 Screening Worksheet (Manual Chapter 0609, Attachment 4), Table 3b directs the user to Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected fire protection defense-in-depth strategies involving post fire safe shutdown systems. However, the Assumptions and Limitations section of Appendix F states that findings involving multiple fire areas are beyond the scope of Appendix F, and findings involving control room evacuation are not explicitly treated in Appendix F. Therefore, a Phase 3 analysis was performed.

The license claimed that the issue involved a performance deficiency that only impacted cold shutdown, and therefore should be screened as Green during a Phase 1 SDP. The NRC concluded that this finding cannot be screened out because the complexity of the issue (e.g., multiple fire areas affected) precludes simple screening, and because the plant conditions and system dependencies prevent a conclusion that only cold shutdown is affected.

Manual Chapter 0308 describes the basis for Appendix F screening out issues involving only cold shutdown as follows:

> The second question screens findings to green that impact only the ability of the plant to achieve cold shutdown. This is consistent with the common risk analysis practice of defining hot shutdown as success. That is, both fire PRAs [probabilistic risk assessments] and Internal Events PRAs typically assume that achieving a safe and stable hot shutdown state constitutes success and the end state for accident sequence analyses. Note that this screening step applies only to findings against 10CFR50 Appendix R, Section III.G.1.b. All other regulatory provisions are considered to involve, in part or in whole, measures provided for preservation and protection of the post-fire hot shutdown capability and will not be screened in this step (e.g., fire prevention, fire suppression, fire brigade, fire barriers, etc.).

The licensee's fire safe shutdown strategy and implementing procedures for the scenarios of concern direct operators to proceed to cold shutdown within a few hours. Operation in hot shutdown and cold shutdown rely on the suppression pool with limited capability for cooling the suppression pool. This strategy is too complex to allow simple risk screening for this finding.

A risk analysis was performed previously for the 2008 procedural problems that affected ten valves, including the three valves addressed by this performance deficiency. This was documented in Inspection Report 05000298/2008008 (EA 07-204). In both the 2008 and current cases, valves RHR-MOV-25A, RHR-MOV-25B, and RHR-MOV-53A were incapable of being remotely operated from the motor starter as prescribed by Procedures 5.4 POST-FIRE and 5.4 FIRE-S/D. Therefore, the linked event tree model developed for the risk estimate performed in 2008 was used to assess the significance of the current issue for these three valves.

Fires that do not require control room evacuation are addressed in Procedure 5.4 POST-FIRE. For fire areas that do not involve control room evacuation, the analyst concluded that the risk for the current finding is less than 1.0E-7 (this is unchanged from 2008 evaluation).

The risk attributable to post fire remote shutdown (control room abandonment sequences) results predominantly from the failure of Valve RHR-MOV-25B to open as described in Procedure 5.4 FIRE-S/D. This is the credited train and the only procedural means for initiating alternative shutdown cooling during the recovery actions. Changes were made to Procedure 5.4 FIRE-S/D subsequent to the 2008 issue which were credited in the current analysis and resulted in a decrease in the risk significance of the subject valves.

The non-recovery probability was decreased by a factor of 78 for the current finding because of changes that were made to Procedure 5.4 FIRE-S/D. These changes in Attachment 1 of the procedure directed the operator at the remote shutdown panel to close SRVs if RHR injection was not observed to be successful and stabilize conditions using high pressure injection. Also, it directed operators to delay securing HPCI (if it was running) until RHR injection is confirmed. Additionally, Attachment 2 to the procedure directed the reactor building operator to open valve RHR-MOV-25B manually if the valve did not operate. However, there is limited instrumentation available at the remote shutdown panel to be able to recognize and diagnose that the valve did not open, and no available indications at the motor starter cabinet. Therefore, the operator who might be able to diagnose the failure of RHR-MO-25B did not have a procedure with the critical recovery step, and the operator with the correct recovery step in his procedure did not have the capability to know whether it was needed.

Using the linked event tree model and a period of exposure of one year, the analyst calculated the ΔCDF to be 2.0E-6/yr for postulated fires leading to the abandonment of the main control room. The analyst concluded that the performance deficiency was of low to moderate significance (White).

A more detailed description to the Phase 3 analysis is attached to this report.

The NRC expects that licensees will ensure that issues potentially impacting nuclear safety are promptly identified, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their significance. Additionally, the NRC expects that for significant problems, licensees will conduct effectiveness reviews of corrective actions to ensure that the problems are resolved. Because the licensee

failed to properly evaluate the circuit operation or conduct verification tests to ensure that corrective actions for a previous violation would reliably position the three valves, the team concluded that this finding has a crosscutting aspect in the Corrective Action Program component, under the Problem Identification and Resolution area (P.1(c) - Evaluation).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI requires, in part:

> Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Emergency Procedure 5.4 POST-FIRE, "Post-Fire Operational Information," Revision 37, and Emergency Procedure 5.4 FIRE-S/D, "Fire Induced Shutdown From Outside the Control Room," Revision 38, were designated as quality-related procedures used to implement operator actions to safely shutdown the plant in response to a fire. Violation 05000298/2008008-01 (EA 07-204) documented a significant condition adverse to quality in that steps in Emergency Procedure 5.4 POST-FIRE and Emergency Procedure 5.4 FIRE-S/D would not achieve and maintain a safe shutdown condition in the event of certain fires.

Contrary to the above, between July 1997 and November, 2010, the licensee failed to ensure that activities affecting quality were prescribed by documented procedures appropriate to the circumstances, and to assure that a significant condition adverse to quality was promptly corrected. Specifically, Emergency Procedure 5.4 POST-FIRE and Emergency Procedure 5.4 FIRE-S/D were changed in 1997 to add steps that were inappropriate to the circumstances because they would not work as written to reposition three motor operated valves needed to establish core cooling. The licensee failed to properly verify and validate procedure steps when the procedure changes were made and on multiple occasions between July 1997 and November 2010, including verification and validation actions performed in response to Violation 05000298/2008008-01.

In addition, contrary to the above, between July 2008 and November 2010, the licensee failed to identify, correct, and preclude repetition of a significant condition adverse to quality. Specifically, Violation 05000298/2008008-01 identified a significant condition adverse to quality in that Emergency Procedure 5.4 POST-FIRE and Emergency Procedure 5.4 FIRE-S/D would not work as written and the licensee had failed to verify and validate procedure steps to ensure that they would work to accomplish the necessary tasks. While addressing that violation, the licensee failed to perform sufficient

evaluation of the circuits to identify and correct a problem with valves RHR-MOV-25A, RHR-MOV-25B, and RHR-MOV-53A.

The licensee entered this issue into their corrective action program as Condition Reports CR-CNS-2010-08193 and CR-CNS-2010-08242. This violation is being treated as an apparent violation (AV), consistent with the Enforcement Policy: AV 05000298/2010006-01, Inadequate Post-Fire Safe Shutdown Procedures.

Because the licensee failed to correct this condition as part of Violation 05000298/2008008-01, and because Violation 05000298/2008008-01 did not receive enforcement discretion, this finding was not appropriate for enforcement discretion.

.2 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe the material condition and configuration of the installed fire area boundaries (including walls, fire doors, and fire dampers) and verify that the electrical raceway fire barriers were appropriate for the fire hazards in the area. The team compared the installed configurations to the approved construction details, supporting fire tests, and applicable license commitments.

The team reviewed installation, repair, and qualification records for a sample of penetration seals to ensure that the fill material possessed an appropriate fire rating and that the installation met the engineering design. The team also reviewed similar records for the rated fire wraps to ensure the material possessed an appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings were identified.

.3 Active Fire Protection

a. Inspection Scope

The team reviewed the design, maintenance, testing, and operation of the fire detection and suppression systems in the selected fire areas. The team verified that the manual and automatic detection and suppression systems were installed, tested, and maintained in accordance with the National Fire Protection Association code of record or approved deviations, and that each suppression system was appropriate for the hazards in the selected fire areas.

The team performed a walkdown of accessible portions of the detection and suppression systems in the selected fire areas. The team also performed a walkdown of major system support equipment in other areas (e.g., fire pumps) to assess the material condition of these systems and components.

The team reviewed the electric and diesel fire pump flow and pressure tests to verify that

the pumps met their design requirements. The team also reviewed high pressure carbon dioxide suppression system functional tests and inspections to verify that the system capability met the design requirements.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team also reviewed pre-fire plans and smoke removal plans for the selected fire areas to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and to facilitate suppression of a fire that could impact post-fire safe shutdown capability. In addition, the team inspected fire brigade equipment to determine operational readiness for fire fighting.

The team observed an unannounced fire drill, conducted on November 1, 2010, and the subsequent drill critique using the guidance contained in Inspection Procedure 71111.05AQ, "Fire Protection Annual/Quarterly." The team observed fire brigade members fight a simulated fire in the Reactor Building, located in a switchgear room. The team verified that the licensee identified problems, openly discussed them in a self-critical manner at the drill debrief, and identified appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment was brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives.

b. Findings

No findings were identified.

.4 Protection From Damage From Fire Suppression Activities

a. Inspection Scope

The team performed plant walkdowns and document reviews to verify that redundant trains of systems required for hot shutdown, which are located in the same fire area, would not be subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, the team verified that:

- A fire in one of the selected fire areas would not directly, through production of smoke, heat, or hot gases, cause activation of suppression systems that could potentially damage all redundant safe shutdown trains.

- A fire in one of the selected fire areas or the inadvertent actuation or rupture of a fire suppression system would not directly cause damage to all redundant trains.

- Adequate drainage was provided in areas protected by water suppression systems.

b. Findings

No findings were identified.

.5 Alternative Shutdown Capability

a. Inspection Scope

Review of Methodology

The team reviewed the safe shutdown analysis, operating procedures, piping and instrumentation drawings, electrical drawings, the Final Safety Analysis Report, and other supporting documents to verify that hot and cold shutdown could be achieved and maintained from outside the control room for fires that require evacuation of the control room, with or without offsite power available.

Plant walkdowns were conducted to verify that the plant configuration was consistent with the description contained in the safe shutdown and fire hazards analyses. The team focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor decay heat removal, process monitoring instrumentation, and support systems functions.

The team also verified that the systems and components credited for shutdown would remain free from fire damage. Finally, the team verified that the transfer of control from the control room to the alternative shutdown location would not be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

Review of Operational Implementation

The team verified that licensed and non-licensed operators received training on alternative shutdown procedures. The team also verified that sufficient personnel to perform a safe shutdown were trained and available onsite at all times, exclusive of those assigned as fire brigade members.

A walkthrough of the post fire safe shutdown procedure with licensed and non-licensed operators was performed to determine the adequacy of the procedure. The team verified that the operators could be reasonably expected to perform specific actions within the time required to maintain plant parameters within specified limits. Time critical actions that were verified included restoring electrical power, establishing control at the remote shutdown and local shutdown panels, establishing reactor coolant makeup, and establishing decay heat removal.

The team reviewed manual actions to ensure that they had been properly reviewed and approved and that the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each fire area.

The team also reviewed the periodic testing of the alternative shutdown transfer capability and instrumentation and control functions to verify that the tests are adequate to demonstrate the functionality of the alternative shutdown capability.

b. Findings

No findings were identified.

.6 Circuit Analysis

a. Inspection Scope

This segment of inspection is suspended for plants in transition to a risk-informed fire protection program in accordance with NFPA 805. Therefore, the team did not evaluate this area.

b. Findings

No findings were identified.

.7 Communications

a. Inspection Scope

The team inspected the contents of designated emergency storage lockers and reviewed the alternative shutdown procedure to verify that portable radio communications and fixed emergency communications systems were available, operable, and adequate for the performance of designated activities. The team verified the capability of the communication systems to support the operators in the conduct and coordination of their required actions. The team also verified that the design and location of communications equipment such as repeaters and transmitters would not cause a loss of communications during a fire. The team discussed system design, testing, and maintenance with the system engineer.

The team reviewed the licensee's response to Condition Report CR-CNS-2010-07848. The team verified the licensee properly implemented the Maintenance Rule program with respect to the communications systems required for alternative shutdown.

b. Findings

No findings were identified.

.8 Emergency Lighting

a. Inspection Scope

The team reviewed the portion of the emergency lighting system required for alternative shutdown to verify that it was adequate to support the performance of manual actions required to achieve and maintain hot shutdown conditions and to illuminate access and egress routes to the areas where manual actions would be required. The team evaluated the locations and positioning of the emergency lights during a walkthrough of the alternative shutdown procedure.

The team verified that the licensee installed emergency lights with an 8-hour capacity, maintained the emergency light batteries in accordance with manufacturer recommendations, and tested and performed maintenance in accordance with plant procedures and industry practices. The team also verified the licensee properly implemented the Maintenance Rule program with respect to the emergency lighting systems required for alternative shutdown.

The team identified several concerns with the adequacy of the emergency lights during the walkthrough of the alternative shutdown procedure. In response to these concerns, the licensee performed blackout tests to demonstrate the adequacy of the installed emergency lights. The team observed blackout tests in the following areas:

- Control Building Corridor, 903' Elevation
- Control Building Basement, 881' Elevation
- Diesel Generator 2 Room

b. Findings

Introduction. The team identified a Green noncited violation of 10 CFR 50.65(a)(2) for the failure to monitor the performance of the emergency lighting system against the established performance criteria.

Description. During the inspection, the team reviewed the licensee's maintenance program for the emergency lighting system. The team determined that the licensee did not perform tests that demonstrated the capability of the emergency lights to last 8 hours. Instead, the licensee replaced each emergency light battery at a prescribed frequency. The licensee previously demonstrated the capability of the emergency lights to last 8 hours via the performance of internal resistance measurements. In 2008, the licensee modified their maintenance program to remove the internal resistance measurements and rely upon the prescribed replacement strategy.

The team also reviewed the licensee's implementation of their Maintenance Rule program with respect to the emergency lighting system. The licensee included the emergency lighting system into the Maintenance Rule program and included a performance criterion for the emergency light batteries to support 8-hours of operation, as required by 10 CFR Part 50, Appendix R, Section III.J.

Since the licensee did not perform tests that demonstrated the capability of the emergency lights to last 8 hours, the team determined that the licensee failed to monitor the performance of the emergency lights against the established performance criteria.

Analysis. The failure to monitor the performance of the emergency lighting system against the performance criteria stated in the Maintenance Rule program was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure of the emergency lights to last 8 hours could adversely affect the ability of operators to perform the manual actions required to support safe shutdown in the event of a fire.

The significance of this finding was evaluated using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because the performance deficiency affected fire protection defense-in-depth strategies involving post-fire safe shutdown systems. The team assigned the performance deficiency to the Post-fire Safe Shutdown category since it affected systems or functions relied upon for post-fire safe shutdown.

The finding was assigned a low degradation rating since the finding minimally impacted the performance and reliability of the fire protection program element. Specifically, the team determined that the licensee's preventive maintenance strategy provided reasonable assurance that the emergency lights would last sufficiently long for the operators to perform the most time critical manual actions required to support safe shutdown in the event of a fire. The team also noted that operators were required to obtain and carry flashlights. Therefore, the finding screened as having very low safety significance (Green).

The NRC expects that licensee decisions demonstrate that nuclear safety is an overriding priority and to conduct effectiveness reviews of safety-significant decisions to identify possible unintended consequences. Because the licensee failed to identify that deleting emergency light testing impacted Maintenance Rule performance monitoring, the team concluded that this finding had a crosscutting aspect in the area of human performance associated with decision making. Specifically, the licensee failed to identify possible unintended consequences of the decision to change the maintenance program for the emergency lights. [H.1(b)]

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Section 65, Paragraph (a)(1), requires, in part, that licensees shall monitor the performance or conditions of structures, systems, or components (SSCs) within the scope of the maintenance rule as defined by 10 CFR 50.65 (b), against licensee established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions.

Title 10 of the Code of Federal Regulations, Part 50, Section 65, Paragraph (a)(2) states, in part, that monitoring as specified in 10 CFR 50.65 (a)(1) is not required where it has been demonstrated that the performance or condition of a SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function.

The licensee's Maintenance Rule program included the emergency lighting system and established a performance criterion that the emergency lighting system batteries support 8-hours of operation, as required by 10 CFR Part 50, Appendix R, Section III.J.

Contrary to the above, from October 3, 2008 to November 5, 2010, the licensee failed to demonstrate that the performance of the emergency lighting system was effectively controlled through the performance of appropriate preventive maintenance and did not smonitor the emergency lighting system against licensee established goals. Specifically, the licensee failed to demonstrate that the emergency lighting system remained capable of providing 8 hours of illumination for post-fire safe shutdown.

The licensee entered this issue into their corrective action program as Condition Reports CR-CNS-2010-08014 and CR-CNS-2010-08250. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated as a noncited violation, consistent with the Enforcement Policy: NCV 05000298/2010006-03, Failure to Monitor the Performance of the Emergency Lights Against the Maintenance Rule Criteria.

.9 Cold Shutdown Repairs

a. Inspection Scope

The team verified that the licensee identified repairs needed to reach and maintain cold shutdown and had dedicated repair procedures, equipment, and materials to accomplish these repairs. Using these procedures, the team evaluated whether these components could be repaired in time to bring the plant to cold shutdown within the time frames specified in the design and licensing bases. The team verified that the repair equipment, components, tools, and materials needed for the repairs were available and accessible on site.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

The team verified that compensatory measures were implemented for out-of-service, degraded, or inoperable fire protection and postfire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment; passive fire barriers; or pumps, valves, or electrical devices providing safe shutdown functions). The team also verified that the short-term compensatory measures compensated for the degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

A finding related to this review was documented in Section 1R05.01. No additional findings were identified.

.11 B.5.b Inspection Activities

a. Inspection Scope

The team reviewed the licensee's implementation of guidance and strategies intended to maintain or restore core, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire as required by Section B.5.b of the Interim Compensatory Measures Order, EA-02-026, dated February 25, 2002 and 10 CFR 50.54(hh)(2).

The team reviewed a licensee's strategy to verify that they continued to maintain and implement procedures, maintain and test equipment necessary to properly implement the strategy, and to ensure that station personnel are knowledgeable and capable of implementing the procedure. The team performed a visual inspection of portable equipment used to implement the strategy to ensure availability and material readiness of the equipment, including the adequacy of portable pump trailer hitch attachments, and verify the availability of onsite vehicles capable of towing the portable pump. The team assessed the offsite ability to obtain fuel for the portable pump, and foam used for firefighting efforts. The team reviewed the following strategy as an inspection sample:

- 5.3 Alt-Strategy, "Alternative Core Cooling Mitigating Strategies," Revision 023, Attachment 4, "Manual Operation of RCIC [reactor core isolation cooling]."

b. Findings

No findings were identified.

4. OTHER ACTIVITIES [OA]

4OA2 Identification and Resolution of Problems

Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team selected a sample of condition reports associated with the licensee's fire protection program to verify that the licensee had an appropriate threshold for identifying deficiencies. In addition, the team reviewed the corrective actions proposed and implemented to verify that they were effective in correcting identified deficiencies. The team also evaluated the quality of recent engineering evaluations through a review of condition reports, calculations, and other documents during the inspection.

b. Findings

Findings related to this review are documented in Sections 1R05.01 and 1R05.05. No additional findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The team presented the inspection results to Mr. D. Willis, General Manager, Plant Operations, and other members of the licensee staff at a debrief meeting on November 5, 2010. The licensee acknowledged the findings presented.

The team presented the inspection results to Mr. D. Buman, Director of Engineering, and other members of the licensee staff at an exit meeting on March 14, 2011. The licensee acknowledged the findings presented.

The inspectors confirmed that proprietary material examined during the inspection had been returned.

ATTACHMENTS: SUPPLEMENTAL INFORMATION
FINAL SIGNIFICANCE DETERMINATION SUMMARY

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Aldana, Security Coordinator
R. Alexander, Electrical Superintendent
J. Austin, System Engineering Manager
T. Barker, Quality Assurance Manager
J. Bebb, Security Manager
S. Bebb, Administrative Services Manager
M. Bergmeier, Operation Support Group Supervisor
K. Billesbach, Materials, Purchasing and Contracts Manager
D. Buman, Director of Engineering
K. Cardy, Fire Protection Engineer
G. Chinn, Contractor
L. Deuhirst, Corrective Actions and Assessments Manager
R. Dyer, Engineering Support Program Engineer
J. Dykstra, Electrical Engineering Program Supervisor
R. Estrada, Design Engineering Manager
J. Flaherty, Senior Staff Licensing Engineer
J. Gage, Reactor Operator
R. Gauchat, Security Training Supervisor
T. Hattovy, Engineering Support Manager
D. Jones, Safety Coordinator
T. Kahland, Reactor Operator
C. Long, Engineering Specialist
D. McGargill, Non-Licensed Operator
T. Mueller, Senior Reactor Operator
K. Newcomb, Fire Marshal
D. Oshlo, Information Technology Manager
R. Penfield, Operations Manager
D. Seylock, Training Manager
J. Shrader, Fire Safety Lead, Nebraska Public Power District
D. Van Der Kap, Licensing Manager
M. Van Winkle, Electrical Design Supervisor
D. Weniger, Valves Program Engineer
D. Willis, General Manager, Plant Operations
A. Zaremba, Director of Nuclear Safety Assessment

NRC personnel

M. Chambers, Resident Inspector
S. Vaughn, NRR/DIRS/IPAB
J. Bowen, NRR/DIRS/IRIB
D. Loveless, Senior Reactor Analyst, RIV/DRS
M. Runyan, Senior Reactor Analyst, RIV/DRS

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened		
05000298/2009006-01	AV	Inadequate Post-Fire Safe Shutdown Procedures (Section 1R05.01)
Opened and Closed		
05000298/2009006-02	NCV	Failure to Correct a Condition Adverse to Quality Related to Post-Fire Safe Shutdown (Section 1R05.05)
Closed	None	

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
BWR	Boiling Water Reactor
CR	Condition Report
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
FSAR	Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
LPSI	Low Pressure Safety Injection
MOV	Motor Operated Valve
NCV	Noncited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
PAR	Publicly Available Records
PRA	Probabilistic Risk Assessment
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SDP	Significance Determination Process
SRV	Safety/Relief Valve

LIST OF DOCUMENTS REVIEWED

CALCULATIONS

Number	Title	Revision
NEDC 01-030	HPCI Room Heatup During Appendix R Shutdown from Alternative Shutdown Panel	2
NEDC 09-080	Multiple Spurious Operation Expert Panel Results	0
NEDC 85-081	Pressure Drop in Steam Line to the HPCI Turbine	0C1
NEDC 94-034H	Containment Analysis for Appendix R – Shutdown from Alternative Shutdown Room	2
NEDC 95-003	Determination of Allowable Operating Parameters for CNS MOV Program MOVs	23

CONDITION REPORTS (CRs)

CR-CNS-2004-03595	CR-CNS-2004-05511	CR-CNS-2006-03138
CR-CNS-2007-01248	CR-CNS-2007-04155	CR-CNS-2007-07065
CR-CNS-2008-05653	CR-CNS-2008-5751	CR-CNS-2008-05766
CR-CNS-2007-08253	CR-CNS-2010-02387	CR-CNS-2010-03500
CR-CNS-2010-05023	CR-CNS-2010-05269	CR-CNS-2010-05855
CR-CNS-2010-05856	CR-CNS-2010-06942	CR-CNS-2010-06184
CR-CNS-2010-06236	CR-CNS-2010-06245	CR-CNS-2010-06258
CR-CNS-2010-06264	CR-CNS-2010-06441	CR-CNS-2010-06775
CR-CNS-2010-06942	CR-CNS-2010-07010	CR-CNS-2010-07527
CR-CNS-2010-07527	CR-CNS-2010-07553	CR-CNS-2010-07553
CR-CNS-2010-07757*	CR-CNS-2010-07762*	CR-CNS-2010-07776*
CR-CNS-2010-07803*	CR-CNS-2010-07813*	CR-CNS-2010-07823*
CR-CNS-2010-07831*	CR-CNS-2010-07839*	CR-CNS-2010-07847*
CR-CNS-2010-07848*	CR-CNS-2010-07857*	CR-CNS-2010-07859*
CR-CNS-2010-07861*	CR-CNS-2010-07914*	CR-CNS-2010-08163*
CR-CNS-2010-08165*	CR-CNS-2010-08166*	CR-CNS-2010-08167*
CR-CNS-2010-08201*	CR-CNS-2010-08221*	CR-CNS-2010-08250*

CR-CNS-2010-08253*		

* Condition Report initiated due to inspection activities.

DRAWINGS

Number	Title	Revision
14EK-0144	Diesel Engine Generator Schematic Diagram	N22
85B-70008 Sheet 159	Wiring Diagram WD-12, 13, & 14 F.V.R. Starter	N00
0709-003	Ruskin Model NIBD23 3 Hour Type C – U.L. Labeled Horizontal Fire Damper 1 X 1	B
0717-005	Ruskin Model NIBD23 3 Hour Type A – U.L. Labeled Horizontal Fire Damper	N01
00735-001	Ruskin Model NIBD23 3 Hour Type C – U.L. Labeled Horizontal Fire Damper 1 X 1	0
2006 Sheet 1	Flow Diagram – Circulating, Screen Wash and Service Water Systems	N76
2031 Sheet 2	Flow Diagram - Reactor Building – Closed Cooling Water System	N65
2036 Sheet 1	Flow Diagram - Reactor Building – Service Water System	N98
2038 Sheet 1	Flow Diagram, Reactor Buiding Floor & Roof Drain Systems	N49
2038 Sheet 2	Flow Diagram, Reactor Buiding Floor & Roof Drain Systems	N03
2040 Sheet 1	Flow Diagram – Residual Heat Removal System	N80
2042	Flow Diagram - Reactor Building – Main Steam System	N85
2045 Sheet 1	Flow Diagram – Core Spray System	N58
2016 Sheet 1C	Flow Diagram – Fire Protection – Reactor Building	N03
2016 Sheet 2	Fire Protection System - Flow Diagram For Pumphouse and Storage Tanks	N30
2016 Sheet 4	Halon and Cardox System Flow Diagram	N04
2041	Reactor Building-Main Steam System-Cooper Nuclear Station	N23
2629-1	8" MS-1 & 10" MS-1 Main Steam	N17
3002 Sheet 1	Auxiliary One Line Diagram Motor Control Center Z, Switchgear Bus 1A, 1B, 1E, And Critical Switchgear Bus 1F, And 1G	N44

3004 Sheet 3	Auxiliary One Line Diagram Motor Control Center C, D, H, J, DG1, And DG2	N22
3012 Sheet 1	Main Three Line Diagram	N08
3012 Sheet 2	Main Three Line Diagram	N06
3012 Sheet 3	Main Three Line Diagram	N19
3012 Sheet 4	Main Three Line Diagram	N13
3012 Sheet 5	Main Three Line Diagram	N15
3012 Sheet 6	Main Three Line Diagram	N17
3012 Sheet 7	Main Three Line Diagram	N08
3012 Sheet 8	Main Three Line Diagram	N07
3012 Sheet 8a	Main Three Line Diagram	N05
3012 Sheet 9	Main Three Line Diagram	N09
3012 Sheet 10	Main Three Line Diagram	N11
3012 Sheet 12	Electrode Boiler Switchgear Main Three Line Diagram	N03
3019 Sheet 3	4160V Switchgear Elementary Diagrams	N36
3020 Sheet 4	4160V Switchgear Elementary Diagrams	N20
3020 Sheet 8	4160V Switchgear Elementary Diagrams	N32
3020 Sheet 9	4160V Switchgear Elementary Diagrams	N22
3020 Sheet 4	4160V Switchgear Elementary Diagrams	N20
3024 Sheet 8	4160V Switchgear Elementary Diagrams Lighting Plan	N32
3045 Sheet 14	Control Elementary Diagrams	N48
3058	D.C. One Line Diagram	N53
3058 Sheet 1	D.C. One Line Diagram	N53
3059, Sheet 1	D.C. Panel Schedules Cooper Nuclear Station	36
3065 Sheet 17	Control Elementary Diagrams	N44
3065 Sheet 17a	Control Elementary Diagram	N11
3177	Outdoor Grounding Plans And Details	N02
3251 Sheet 11	4160V Switchgear Connection Wiring Diagram	N20
3253 Sheet R-1	480V Motor Control Center R Connection Wiring Diagram	N15

3257, Sheet 71	Alternative Shutdown ADS Panel Internal Connections	N06
3700 Sheet 16	Annunciator Elementary Ladder Diagram	N05
3720 Sheet 1	Multiplexer Input Wiring ANN-MUX-10	N04
3726 Sheet 1	Multiplexer Input Wiring ANN-MUX-16	N03
3727 Sheet 1	Multiplexer Input Wiring ANN-MUX-17	N05
3751 Sheet 7	Annunciator Loop Diagram ANN-MUX-01 Devices Sheet No. 6B	N00
3757 Sheet 1	Annunciator Loop Diagram ANN-MUX-07	N01
3766 Sheet 1	Annunciator Loop Diagram ANN-MUX-16	N02
3767 Sheet 1	Annunciator Loop Diagram ANN-MUX-17	N04
0133C8690 Sheet 15	Horizontal Drawout M/C Switchgear Device And Harness Identification	1-17-1973
0223R0558 Sheet 32	Power And Control Circuits Line-Up 08 Units 1 And 2	N22
453200226	Piping Isometric – Wet Sprinkler System Electrical Trays In North East Corner Reactor Building – Floor Elevation 903'-6"	N04
454016108	Contract E69-20 Fire Protection System	N10
454016113	Contract E69-20 Fire Protection System	N01
454016115	Contract E69-20 Fire Protection System	N01
454016116	Contract E69-20 Fire Protection System	N04
454016126	Nebraska Public Power District Contract Number E-69-20	N04
115D6011, Sheet 1	Local Rack 25-50	N00
729E720BB	High Pressure Coolant Injection System	N03
730E149BB, Sheet 1	Functional Control Diagram	N05
730E149BB, Sheet 2	Main Steam Line Isolation Valve Control System Logic	N04
791E253 Sheet 1	Automatic Blowdown System Elementary Diagram	N30
791E253 Sheet 2	Automatic Blowdown System Elementary Diagram	N27
791E253 Sheet 3	Automatic Blowdown System Elementary Diagram	N11
791E264 Sheet 7	Elementary Diagram Reactor Core Isolation Cooling System (13-113)	N15
791E271, Sheet 6	Cooper Nuclear Station-HPCI System-Elementary Diagram	N19

791E266 Sheet 12	Elementary Diagram Primary Containment Isolation System (16-23)	N12
791E514 Sheet 1	Connection Diagram Panel 9-21	N23
791E514 Sheet 2	Connection Diagram Panel 9-21	N01
944E689 Sheet 1	Elementary Diagram (Mod) Low-Low Set	N13
CNS-EQ-105 Sheet 1	EQ Configuration Detail GE/PCI Pressure Switch	N01
CNS-EQ-105 Sheet 2	EQ Configuration Detail, GE/PCI Pressure Switch Tabulation Sheet	N01
CNS-FP-146	932'-6" Reactor Building – North Wall Critical Switchgear Room 1G Fire area Boundary Drawing	N06
CNS-FP-170	Fire Area Boundary Drawing Diesel Generator Room "1" South Wall	N05
CNS-FP-171	Fire Area Boundary Drawing Diesel Generator Room "2" North Wall	N05
CNS-FP-215	Fire Protection Pre-Fire Plan Reactor Building First Floor Elevation 903'-6"	N04
CNS-FP-216	Fire Protection Pre-Fire Plan Reactor Building Critical Switchgear Room 1F Elevation 932'-6"	N03
CNS-FP-221	Fire Protection Pre-Fire Plan Reactor Building MG Set Area Elevation 976'-0"	N05
CNS-FP-236	Fire Protection Pre-Fire Plan Diesel Generator Building D.G. # 1 Elevations 917'-6" and 903'-6"	N05
CNS-FP-285 Sheet 1	CNS Fire Barrier Penetration Seal Details	N04
CNS-EE-186	Safe Shut Down Component Locations & Emergency Route Lighting, 903'-6" Diesel Generator Building	4
CNS-LRP-3, Sheet 4	Local Rack 25-50 Structure	N00
CNS-LRP-3, Sheet 8	Local Rack 25-50 Structure	N01
CNS-LRP-3, Sheet 9	Local Rack 25-50 Structure	N02
E0223R0558, Sheet 33	Power And Control Circuits Line-Up 09 Units 1 And 2 Lighting Plan Sheet 2	N23
E501 Sheet 17A	Integrated Control Circuit Diagram CS-MOV-MO12A Core Spray Inboard Injection Valve	N01
E501 Sheet 17B	Integrated Control Circuit Diagram RHR-MOV-MO25A	N02
E501 Sheet 17C	Integrated Control Circuit Diagram RHR-MOV-MO27A RHR Loop A Injection Outboard Isolation	N02
E501 Sheet 23A	Integrated Control Circuit Diagram RHR-MOV-MO18 RHR Suction Cooling Inboard Isolation Valve	N01

E501 Sheet 26A	Integrated Control Circuit Diagram SW-MOV-M089A RHR Heat Exchanger A Service Water Outlet	N01
E501 Sheet 29C	Integrated Control Circuit Diagram RCIC-MOV-MO21 RCIC Injection	N01
E501 Sheet 30	Motor Operated Valves Connection Diagrams	N08
E501 SHEET30C	Integrated Control Circuit Diagram RHR-MOV-MO17 RHR Shutdown Cooling Supply Outboard Isolation	N01
E501 Sheet 33A	Integrated Control Circuit Diagram HPCI-MOV-MO58 HPCI Pump Suction From Suppression Pool	N01
E501 Sheet 44	Motor Operated Valves Connection Diagrams	N02
E501 Sheet 45A	Integrated Control Circuit Diagram RHR-MOV-MO25B RHR Loop B Injection Inboard Isolation	N02
E501 Sheet 48A	Integrated Control Circuit Diagram SW-MOV-MO89B RHR Heat Exchanger B Service Water Outlet	N02
E507 Sheet 24	Connection Wiring Diagram Reactor Building	N08
E507 Sheet 29	Connection Wiring Diagrams Reactor Building	N03
E507 Sheet 235	Reactor Building Terminal Box 242 Connection Wiring Diagram	N01
G5-262-743 Sheet 1	Emergency Diesel Generator No.1 Electrical Schematic	N23
G5-262-746 Sheet 2	Emergency Diesel Generator No.1 Electrical Schematic	N18
G5-262-746 Sheet 3	Emergency Diesel Generator No.1 Electrical Schematic	N23
G5-262-746 Sheet 4	Emergency Diesel Generator No.1 Electrical Schematic	N12
G5-262-746 Sheet 5	Emergency Diesel Generator No.1 Internal Wiring Diagram	N19
G5-262-746 Sheet 6	Emergency Diesel Generator No.1 Control Panel Wiring Diagram	N16
X2629-200	MS-1 Main Steam	N06

FIRE IMPAIRMENTS

FP08-01-FP-SD-61A&B	FP10-01-NO APPDX R LIGHT	FP10-01-FP-SD-533 CEILING TILE
FP10-02-FP-HT-3 FLOODED	FP10-01-FC9ASDG100F	FP10-01-EE-LTG-APP R
FP10-02-6.FP.302	FP10-01-COMP RM TILES	FP10-01-FP-PNL-CAS
FP10-01-RW BLDG HORNS	FP10-01-CORE BORES	FP10-01-SWP RM HALON
FP10-01-EE-LTG-R18 BULB FAIL	FP10-02-FP-HT-12 IMPAIRED	FP10-02-FP-HT-15 INACCESSABLE
FP10-01-APPDX R FW OVERFILL	FP10-01-WW FALSE ALRM AHU1	FP10-01-FP APP R

FP10-01-6.1FP.6.01 4705129	FP10-01-6.FP.301 4704985	10-0088

PREVENTIVE MAINTENANCE TASKS

4624836	4624889	4663722	4663770	4712840	4713833

PROCEDURES

Number	Title	Revision
Administrative Procedure 0.5	Conduct of the Condition Report Process	67
Administrative Procedure 0.10	Operating Experience Program	21
Administrative Procedure 0.23	CNS Fire Protection Plan	60
Administrative Procedure 0.39	Hot Work	42
Administrative Procedure 0.39.1	Fire Watches and Fire Impairments	6
Emergency Procedure 5.3ALT-STRATEGY	Alternative Core Cooling Mitigating Strategies	23
Emergency Procedure 5.4FIRE-S/D	Fire Induced Shutdown From Outside Control Room	38
Emergency Procedure 5.4POST-FIRE	Post-Fire Operational Information	36 and 37
Maintenance Procedure 15.EE.302	Appendix R/SBO Lighting Functional Test	20
Maintenance Procedure 7.3.21.7	3M Interam E-5A Fire Wrap Fire Resistive Assembly	12
Non-TS Surveillance Procedure 15.FP.303	Fire Detection System Tri-Annual Test (Group 1)	15
Non-TS Surveillance Procedure 15.FP.652	Critical Switchgear Room Duct Wrap Visual Inspection	2
3.9	ASME OM Code Testing Of Pumps and Valves	25
Surveillance	ADS Manual Valve Circuit Continuity from ASD-ADS	11

Procedure 6.ADS.202	Panel	
Surveillance Procedure 6.CSCS.404	IST Closure Test of HPCI-CV-10CV and RCIC-CV-10CV	7
Surveillance Procedure 6.FP.102	Annual Testing of Fire Pumps	30
Surveillance Procedure 6.FP.203	Fire Damper Assembly Examination (Fire Protection System 18 Month Examination)	0 and 9
Surveillance Procedure 6.FP.301	Operations Power Block Sprinkler System Testing	17
Surveillance Procedure 6.FP.302	Automatic Deluge and Pre-Action Systems Testing	19
Surveillance Procedure 6.FP.304	Fire Detection System Circuitry Operability	7
Surveillance Procedure 6.FP.606	Fire Barrier/Fire Wall Visual Examination	12
Surveillance Procedure 6.HPCI.306	Calibration Procedure for HPCI Pressure Instrumentation	8
Surveillance Procedure 6.HPCI.311	HPCI Turbine Trip and Initiation Logic Functional Test	7
Surveillance Procedure 6.SRV.303	Safety Valve and Relief Valve Position Indication Operability Check And LLS Logic Test	13
Surveillance Procedure 6.1FP.301	Diesel Generator CO2 Operability Teat (DIV 1)	10
Surveillance Procedure 6.1FP.302	Fire Detection System 184 Day Examination	9
Surveillance Procedure 6.1FP.601	High Pressure CO2 Cylinder Examination (DIV 1)	12
Surveillance Procedure 7.3.12.2	Safe Shutdown BBESI Emergency Lighting Unit Examination and Maintenance	14
Surveillance Procedure 15.EE.302	Appendix R/SBO Lighting Functional Test	20
Surveillance Procedure 15.FP.305	Fire Detection System Tri-Annual Test (Group 3)	10
System Operating	Communication Systems	41

Procedure 2.2.4		

MISCELLANEOUS DOCUMENTS

Number	Title	Revision
COR002-18-02	OPS-Reactor Core Isolation Cooling	17
Cutler-Hammer	Instructions For Size 1 Or 2 Type B Thermal Overload Relay, 3 Pole, Ambient Compensated Or Non-Compensated I.L.16954A	June 1998
Design Criteria Document 11	Fire Protection Systems	May 10, 2010
Engineering Evaluation Number EE 09-031	Evaluation of Critical Switchgear Rooms 1F and 1G Fire Barrier Separation	0
Evaluation Number EE 04-046	Appendix R MOV Overthrust Evaluation	0
Engineering Procedure Number E-510	Ruskin Manufacturing Company - Site Storage and Handling of NIED-23 Curtain Type Fire Dampers	2
EQDP.2.210	Electroswitch Series 24 (3 Sheets On EQ Certification of Model 24210B Switch)	10
Letter LQA8200158	Fire Protection Rule 10 CFR 50, Appendix R	June 28, 1982
Letter LQA8300109	Fire Protection Rule 10 CFR 50, Appendix R, Preliminary Supplemental Response (Revised)	March 18, 1983
Nebraska Public Power District Letter	Response to Appendix A to Branch Technical Position APCB 9.5-1 Guidelines for Fire Protection for Nuclear Power Plants	December 17, 1976
Nebraska Public Power District Letter	Revisions and Additional Information Fire Protection Review	April 6, 1977
Nebraska Public Power District Letter	Fire Protection Rule 10 CFR 50, Appendix R, Preliminary Supplemental Response (Revision 2)	June 02, 1983
NRC Letter	K. R. Goller, NRC, to Nebraska Public Power District	November 29, 1977
NRC Letter	G. Lear, NRC, to Nebraska Public Power District	February 24, 1978
NRC Letter	T. Ippolito, NRC, to Nebraska Public Power District	May 23, 1979
NRC Letter	T. Ippolito, NRC, to Nebraska Public Power District	September 18, 1979

NRC Letter	T. Ippolito, NRC, to Nebraska Public Power District	November 21, 1980
NRC Letter	D. Vassallo, NRC, to Nebraska Public Power District	April 29, 1983
NRC Letter	D. Vassallo, NRC, to Nebraska Public Power District	September 21, 1983
NRC Letter	D. Eisenhut, NRC, to Nebraska Public Power District	September 21, 1983
NRC Letter	Safety Evaluation For Appendix R to 10 CFR Part 50, Items II.G.3 and III.L, Alternative or Dedicated Shutdown Capability	April 16, 1984
NRC Letter	Outstanding Fire Protection Modifications	August 21, 1985
NRC Letter	W. Long, NRC, to Nebraska Public Power District	April 10, 1986
NRC Letter	W. Long, NRC, to Nebraska Public Power District	September 9, 1986
NRC Letter	Cooper Nuclear Station – Amendment No. 126 to Facility Operation License No. DPR-46	November 7, 1988
NRC Letter	Cooper Nuclear Station – Amendment No. 127 to Facility Operation License No. DPR-46	February 3, 1989
NRC Letter	Revocation Of Exemption From 10 CFR Part 50, Appendix R – Cooper Nuclear Station	August 15, 1995
NRC Letter	Conversion To Improved Technical Specifications For The Cooper Nuclear Station - Amendment No. 178 To Facility Operating License No. DPR-46	July 31, 1998
OTH015-92-02	Lesson Plan Post Fire Shutdown Outside The Control Room Procedures (5.4POST-FIRE, 5.4FIRE-S/D, 5.1ASD)	09
Siemens-Allis DC Contactors	DC Contactors Special Purpose 2 Pole, 600V Max AC or DC Operated Pages 147 And 148	No Date
Siemens Overload 2 Sheets	Manufactures Data Thermal Overload Relays Type 3UA59	April 1997
Siemens Overload 4 Sheets	Manufacture's Data On Bimetallic Thermally Delayed Overload Relays Type 3UA5, 3UA6 Class 10	No Date
Southwest Research Institute	NPPD PO# 4500092806 Williams Fire Pump Diesel Oil Test Summary Report	July 29,2008
Southwest Research Institute	NPPD PO# 4500100440 Williams Fire Pump Diesel Oil Analytical Test Report	Revision 1 May 11, 2009
Southwest Research Institute	NPPD PO# 4500102145 Williams Fire Pump Diesel Oil Analytical Test Report	May 18, 2010
Technical Publication	Electroswitch Series 24 Instrument and Control	February 1998

24-1	Switches For Power Industry and Heavy Duty Industrial Applications	
Technical Requirements Manual Section 3.11	Fire Protection Systems	July 29, 2010
Technical Specification 3.3.3.2	Alternative Shutdown System	Amendment 233
Updated Safety Analysis Report Section VII-18	Alternative Shutdown Capability	July 24, 2001
Updated Safety Analysis Report Section X-9	Fire Protection System	January 08. 2004
Updated Safety Analysis Report Section X-18	Appendix R Safe Shutdown	January 29, 2003
Updated Safety Analysis Report Section XIII-10	Fire Protection Program	April 16, 2010
VM-1730	Emergency Lighting	1
Westinghouse Starter Information	Manufactures Data Sheets Showing 460 VAC A201, A211, A251 Size 2 Magnetic Contactor Non-Reversing Or Reversing I.L. 16961A	April 1984
257HA354AC	GE Design Specification, Sheet 2	2
790523	Amendment No. 56 to Facility Operating License No. DPR – 46	001
4605196	Sample Fuel Oil And Send For Analysis For Williams B.5.b Credited Pump	July 29, 2008
4625867	Sample Fuel Oil And Send For Analysis For Williams B.5.b Credited Pump	April 29, 2009
4664953	Sample Fuel Oil And Send For Analysis For Williams B.5.b Credited Pump	May 03, 2010
	IST Reference/Acceptance Limits Data File	205

SYSTEM TRAINING MANUALS

Number	Title	Revision
COR002-11-02	High Pressure Coolant Injection	26
COR002-19-02	Reactor Equipment Cooling	20
COR002-23-02	Residual Heat Removal System	27

COR002-34-02	Alternative Shutdown System	18

WORK ORDERS

4704976	4704973	4705129	4636801	4704980	4705274	4704985	4704986
4705369	4541652	4680341	4600849	4601469	4625865	4627329	4629553
4634534	4636434	4643635	4648115	4649842	4656140	4659221	4659685
4662049	4664951	4688234	4691445	4694802	4702636	4704770	4711699
4712867	4713861						

FINAL SIGNIFICANCE DETERMINATION SUMMARY
COOPER TRIENNIAL FIRE PROTECTION ISSUE

Significance Determination Basis

a. Phase 1 Screening Logic, Results, and Assumptions

In accordance with NRC Inspection Manual Chapter 0612, Appendix B, "Issue Screening," the issue was determined to be more than minor because it was associated with the equipment performance attribute and affected the mitigating systems cornerstone objective to ensure the availability, reliability, or function of a system or train in a mitigating system in that 3 motor-operated valves would not have functioned following a postulated fire in multiple fire zones. The following summarizes the valves and fire areas affected:

- Valves Affected

  RHR-MO-25A Residual Heat Removal (RHR) A Inboard Injection Valve
  RHR-MO-25B RHR B Inboard Injection Valve
  RR-MO-53A Reactor Recirculation Pump A Discharge Valve

- Fire Areas Affected

CB-A-1	Control Building Division 1 Switchgear Room and Battery Room
CB-B	Control Building Division 2 Switchgear Room and Battery Room
CB-C	Control Building Reactor Protection System Room 1B
CB-D	Control Room, Cable Spreading Room, Cable Expansion Room, and Auxiliary Relay Room
RB-DI (SW)	Reactor Building South/Southwest 903, Southwest Quad 889 and 859, and RHR Heat Exchanger Room B
RB-DI (SE)	Reactor Building RHR Pump B/HPCI Pump Room
RB-J	Reactor Building Critical Switchgear Room 1F RB-K Reactor Building Critical Switchgear Room 1G
RB-M	Reactor Building North/Northwest 931 and RHR Heat ExchangerRoom
RB-N	Reactor Building South/Southwest 931 and RHR Heat Exchanger Room B
TB-A	Turbine Building (multiple areas)

The significance determination process (SDP) Phase 1 Screening Worksheet (Manual Chapter 0609, Attachment 4), Table 3b directs the user to Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected fire protection defense-in-depth strategies involving post fire safe shutdown systems. However, Manual Chapter 0308, Attachment 3, Appendix F, "Technical Basis for Fire Protection Significance Determination Process for at Power Operations," states that Manual Chapter 0609, Appendix F, does not include explicit

treatment of fires in the main control room. The Phase 2 process can be utilized in the treatment of main control room fires, but it is recommended that additional guidance be sought in the conduct of such an analysis.

b. Phase 2 Risk Estimation

Based on the complexity and scope of the subject finding and the significance of the finding to main control room fires, the analyst determined that a Phase 2 estimation was not appropriate.

c. Phase 3 Analysis

A risk analysis was performed previously of a similar problem that affected the three valves addressed by this performance deficiency. This was documented in EA 07-204, Report Number 05000298/2008008, dated June 13, 2008. In both cases, Valves RHR-MOV-25A, RHR-MOV-25B, and RHR-MOV-53A were incapable of being remotely operated from the motor starter as prescribed by Procedure 5.4 FIRE-S/D. The risk estimate performed in 2008 as it pertains to these three valves (the 2008 Phase 3 also included several other valves) remains valid for the current situation. However, changes were made to Procedure 5.4 FIRE-S/D subsequent to the 2008 issue. These changes were credited in the current analysis and resulted in a decrease in the risk significance of the subject valves. Text from the 2008 risk analysis is shown in italics throughout this document.

In accordance with Manual Chapter 0609, Appendix A, the analyst performed a Phase 3 analysis using input from the Nebraska Public Power District, "Individual Plant Examination for External Events (IPEEE) Report – 10 CFR 50.54(f) Cooper Nuclear Station, NRC Docket No. 50-298, License No. DPR-46," dated October 30, 1996, the Standardized Plant Analysis Risk (SPAR) Model for Cooper, Revision 3.31, dated September 2007, licensee input (see documents reviewed list in Enclosure 3), a probabilistic risk assessment using a linked event tree model created by the analyst for evaluating main control room evacuation scenarios, and appropriate hand calculations. **[Note: The SPAR model used in the 2008 analysis has been superseded by newer versions. However, the risk result gained from the portion of the analysis that used this model (non-alternative shutdown scenarios) was not significant to the current risk estimate. Virtually all of the risk associated with the current issue results from the alternative shutdown scenarios for which a specific SPAR model was created. Therefore, the use of the older model has no consequence.]**

Assumptions:

1. *For fire zones that do not have the possibility for a fire to require the main control room to be abandoned, the ignition frequency identified in the IPEEE is an appropriate value.*

2. *The fire ignition frequency for the main control room (P_{FIF}) is best quantified by the licensee's revised value of 6.88 x 10^{-3}/yr.*

3. *Of the original 64 fire scenarios evaluated, 18 were determined to be redundant and were eliminated, 41 of the remaining (documented in Table 1) were identified as the predominant sequences associated with fires that did not result in control room abandonment.* **[Note: the current issue did not include all of the fire scenarios from the 2008 issue, but all of the current fire scenarios are included in the 2008 compilation]**

4. *The baseline conditional core damage probability for a control room evacuation at the Cooper Nuclear Station is best represented by the creation of a probabilistic risk assessment tool previously created by the analyst using a linked event tree method. The primary event tree used in this model is displayed as Figure 1 in the Attachment. The baseline conditional core damage probability as calculated by the linked event tree model was 1.14×10^{-1}, which is similar to the generic industry value of 0.1.*

5. *The analyst used an event tree, RECOVERY-PATH, shown in Figure 2 in the Attachment, to evaluate the likelihood of operator recovery via either restoration of HPCI or manually opening Valve RHR-MO-25B. The resulting non-recovery probability was 7.9×10^{-2}.* **[Note: This value was adjusted to 1.01E-3 in the current analysis based on improvements made to Procedure 5.4 FIRE-S/D.]**

6. *The risk related to a failure of Valve RHR-MO-25B to open following an evacuation of the main control room was evaluated using the analyst's linked event tree model. The conditional core damage probability calculated by the linked event tree model was 1.19×10^{-1}.*

7. *Any fire in the main control room that is large enough to grow and that goes unsuppressed for 20 minutes will lead to a control room evacuation.*

8. *Any fire that is unsuppressed by automatic or manual means in the auxiliary relay room, the cable spreading room, the cable expansion room or Area RB-FN will result in a main control room evacuation.*

9. *The Cooper SPAR model, Revision 3.31, represents an appropriate tool for evaluation of the core damage probabilities associated with postulated fires that do not result in main control room evacuation.*

10. *All postulated fires in this analysis resulted in a reactor scram. In addition, the postulated fire in Fire Area RB-K resulted in a loss-of-offsite power.*

11. *Valves RHR-MO-25A and RHR-MO-25B are low pressure coolant injection system isolation valves. These valves can prevent one method of decay heat removal in the shutdown cooling mode of operation.*

12. *For Valves RHR-MO-25A and RHR-MO-25B, the subject performance deficiency only applies to the portion of the post fire procedures that direct the transition into shutdown cooling.*

13. *Valve RHR-MO-25B must opened from the motor-control center for operators to initiate alternative shutdown cooling from the alternative shutdown panel following a main control room evacuation.*

14. *Valve RHR-MO-53A is the discharge isolation valve for Reactor Recirculation Pump 1-A. The failure to close either this valve or Valve RR-MO-43A would result in a short circuit of the shutdown cooling flow to the reactor vessel. The performance deficiency did not apply to Valve RR-MO-43A.*

15. *The exposure time used for evaluating this finding should be determined in accordance with Inspection Manual Chapter 0609, Appendix A, Attachment 2, "Site Specific Risk-Informed Inspection Notebook Usage Rules." Given that the performance deficiency was known to have existed for many years, the analyst used the 1-year of the current assessment cycle as the exposure period.*

16. *Based on fire damage and/or procedures, equipment affected by a postulated fire in a given fire zone is unavailable for use as safe shutdown equipment.*

17. *The performance deficiency would have resulted in each of the demanded valves failing to respond following a postulated fire.*

18. *In accordance with the requirements of Procedure 5.4POST-FIRE, operators would perform the post-fire actions directed by the procedure following a fire in an applicable fire zone. Therefore, the size and duration of the fire would not be relevant to the failures caused by the performance deficiency.*

19. *Given Assumption 18, severity factors and probabilities of non-suppression were not addressed for postulated fires that did not result in main control room evacuation.*

Postulated Fires Not Involving Main Control Room Evacuation:

The risk significance from fires not involving control room evacuation was determined to be insignificant for the current finding. This was estimated by referring to the 2008 risk evaluation. Text in italics is from the 2008 report and Table 1 is reproduced for the fire areas that involve RHR-MOV-25A, RHR-MOV-25B, or RHR-MOV-53A.

The senior reactor analyst used the SPAR model for Cooper Nuclear Station to estimate the change in risk, associated with fires in each of the associated fire scenarios (Table 1, Items 1 – 41) that was caused by the finding. Average unavailability for test and maintenance of modeled equipment was assumed, and a cutset truncation of 1.0×10^{-13} *was used. For each fire zone, the analyst calculated a baseline conditional core damage probability consistent with Assumptions 9, 10, 25* **[now 17]** *and 26* **[now 18]**.

For areas where the postulated fire resulted in a reactor scram, the frequency of the transient initiator, IE-TRANS, was set to 1.0. All other initiators were set to the house event "FALSE," indicating that these events would not occur at the same time as a reactor scram. Likewise, for Fire Area RB-K, the frequency of the loss-of-offsite power initiator, IE-LOOP, was set to 1.0 while other initiators were set to the house event "FALSE."

With input from the detailed IPEEE notebooks, maintained by the licensee, the analyst was able to better assess the fire damage in each zone. This resulted in a more realistic evaluation of the baseline fire risk for the zone, and lowering the change in risk for each example.

Consistent with guidance in the Reactor Accident Sequence Precursor Handbook, including NRC document, "Common-Cause Failure Analysis in Event Assessment, (June 2007)," the baseline established for the fire zone, and Assumptions 22 through 26, **[now 15 through 19]** *the analyst modeled the resulting condition following a postulated fire in each fire zone by adjusting the appropriate basic events in the SPAR model. Both the baseline and conditional values for each fire zone are documented in Table 1.*

As shown in Table 1, the analyst calculated a change in core damage frequency (ΔCDF) associated with these 41 fire scenarios of 2.9 x 10^{-6}/yr. **[Note: This result included fire areas not affected by the current finding.]**

The analyst evaluated the licensee's qualitative reviews of the 13 fire scenarios that were impacted by the failure of the HPCI turbine to trip. In these scenarios, HPCI floods the steam lines and prevents further injection by either HPCI or reactor core isolation cooling system. Qualitatively, not all fires will grow to a size that causes a loss of the trip function due to spatial separation. Additionally, not all unsuppressed fires would cause a failure of the HPCI trip function. Finally, no operator recovery was credited in these evaluations.

Given that these qualitative factors would all tend to decrease the significance of the finding, the analyst believed that the total change in risk would be significantly lower than the 2.9 x 10^{-6}/yr documented above. Based on analyst judgment and an assessment of the evidence provided by the licensee, an occurrence factor of 0.1 was applied to the13 fire scenarios. This resulted in a total ΔCDF of 7.8 x 10^{-7}/yr. Therefore, the analyst determined that this value was the best estimate of the safety significance for these 41 fire scenarios.

From Table 1, the total risk associated with fire areas that involve Valves RHR-MOV-25A, RHR-MOV-25B, or RHR-MOV-53A is 5.5E-7. As noted above, in the 2008 analysis, there were qualitative reasons for lowering this risk estimate. Also, because the previous evaluation included the contribution from several other valves that affected the same fire areas, the risk attributable to the current evaluation is lower. For these reasons, the analyst concluded that the risk for the current finding is less than 1.0E-7 for fire areas that do not involve control room evacuation.

TABLE 1
Postulated Fires Not Involving Main Control Room Evacuation

Fire Area/Shutdown Strategy	Area/-Zone	Scenario Number	Scenario Description	Ignition Frequency	Base CCDP	Case CCDP	Estimated delta-CDF Contribution	Function Affected
RBC-CF	1C	1	RHR A Pump Room	2.94E-03	8.82E-07	8.15E-05	2.37E.07	
		2	MCC K	3.02E-03	2.76E-05	1.28E-04	3.03E-07	
		3	MCC Q	3.93E-03	2.76E-05	1.28E-04	3.95E-07	
		4	MCC R	3.43E-03	2.76E-05	1.28E-04	3.44E-07	
		5	MCC RB	1.62E-03	1.12E-03	1.21E-03	1.46E-07	
		6	MCC S	2.23E-03	1.12E-03	1.21E-03	2.01E-07	Shut HPCI-MO-14,
		7	MCC Y	3.83E-03	1.12E-03	1.21E-03	3.45E-07	HPCI-MO-16,
		8	Panel AA3	9.98E-04	2.76e-05	1.28E-04	1.00E-07	RHR-MO-921,
	2A/2C	9	Panel BB3	9.98E-04	1.12E-03	1.21E-03	8.98E-08	RWCU-MO-18 and
		10	RCIC Starter Rack	1.32E-03	5.27E-06	8.27E-05	1.02E-07	MS-MO-77
		11	250V Div 1 Rack	5.10E-04	2.76E-05	1.28E-04	5.12E-08	
		12	250V Div 2 Rack	2.09E-04	1.12E-03	1.21E-03	1.88E-08	
		13	ASD Panels	3.02E-04	1.12E-03	1.21E-03	2.72E-08	
CB-A		14		6.74E-03	7.64E-04	7.64E-04	0.00E+00	
		15		1.36E-03	2.61E-06	2.61E-06	0.00E+00	
		16	RPS Room 1A	4.15E-03	1.75E-07	1.75E-07	0.00E+00	Open RHR-MO-25B
		17		2.42E03	3.57E-04	3.58E-04	4.84E-10	and RHR-MO-67
		18	Hallway (used CB corridor)	1.09E-02	2.05E-05	2.85E-05	8.74E-08	

Fire Area/Shutdown Strategy	Area/-Zone	Scenario Number	Scenario Description	Ignition Frequency	Base CCDP	Case CCDP	Estimated delta-CDF Contribution	Function Affected
CB-A1	8H	19	DC Switchgear Room 1A	4.27E-03	3.49E-03	3.49E-04	1.28E-09	Open RHR-MO-17, RHR-MO-25B, and RHR-MO-67
	8E	20	Battery Room 1A	2.25E-03	8.74E-06	1.03E-05	3.51E-09	
CB-B	8G	21	DC Switchgear Room 1B	4.27E-03	1.82E-03	1.83E-03	3.42E-08	Open RHR-MO-25A
	8F	22	Battery Room 1B	2.25E-03	4.81E-06	5.73E-06	2.07E-09	
CB-C	8B	23	RPS Room 1A	4.15E-03	1.75E-07	1.77E-07	5.81E-12	Open RHR-MO-17, RHR-MO-25A, and RHR-MO-67
	8C	24		4.15E-03	1.75E-07	1.77E-07	5.81E-12	
RB-DI (SW)	2D	25	RHR Heat Exchanger Room B	6.70E-04	8.66E-05	8.68E-05	1.27E-10	Shut HPCI-MO-14 and RR-MO-53A
RB-DI (SE)	1D/1E	26	RHR B/HPCI Pump Room	4.28E-03	6.48E-05	1.44E-04	3.37E-07	Shut HPCI-MO-14 and RR-MO-53A
RB-J	3A	27	Switchgear Room 1F	3.71E-03	5.28E-05	5.28E-05	0.00E+00	Open RHR-MO-17, RHR-MO-25B, and RHR-MO-67
RB-L	3B	28	Switchgear Room 1G	3.71E-03	1.77E-02	1.77E-02	0.00E+00	Open RHR-MO-25A
RB-M	3C/3D/ 3E	29	RB Elevation 932	1.13E-02	7.06E-06	8.99E-06	2.18E.08	Open RHR-MO-17 and RHR-MO-25B
	2B	30	RHR Hx Room A	6.70E-04	7.06E-06	8.99E-06	1.29E-09	
RB-N	3C/3D /3E	31	Reactor Building Elevation 932	1.13E-02	1.22E-05	1.38E-05	1.81E-08	Open RHR-MO-25A
	2D	32	RHR Heat Exchanger Room B	6.70E-04	1.22E-05	1.38E-05	1.07E-09	

Fire Area/Shutdown Strategy	Area/-Zone	Scenario Number	Scenario Description	Ignition Frequency	Base CCDP	Case CCDP	Estimated delta-CDF Contribution	Function Affected
TB-A	11D	33	Condenser Pit Area	3.10E-03	4.83E-06	6.20E-06	4.25E-09	
	11E	34	Reactor Feedwater Pump Area	6.25E-03	4.83E-06	6.20E-06	8.56E-09	
	11L	35	Pipe Chase	6.70E-04	4.83E-06	6.20E-06	9.18E-10	
	12C	36	Condenser and Heater Bay Area	3.27E-03	4.83E-06	6.20E-06	4.48E-09	Open RHR-MO17, RHR-MO-25A, and RHR-MO-67
	12D	37	TB Floor 9033	3.45E-03	4.83E-06	6.20E-06	4.73E-09	
	13A	38	Operating Floor Non-critical	5.76E-03	4.83E-06	6.20E-06	7.89E-09	
	13B	39	Switchgear Room	3.79E-03	4.83E-06	6.20E-06	5.19E-09	
	13C	40	Electric Shop	8.56E-04	4.83E-06	6.20E-06	1.17E-09	
	13D	41	I&C Shop	8.90E-04	4.83E-06	6.20E-06	1.22E-09	
Total Estimated △CDF for 41 Postulated Fire Scenarios							2.91E-06	

Post-Fire Remote Shutdown Calculations:

Note: The risk attributable to post-fire remote shutdown (control room abandonment sequences) results predominantly from the inability to operate Valve RHR-MOV-25B as described in Procedure 5.4 FIRE-S/D. This is the credited train and the only procedural means for initiating shutdown cooling during the recovery actions. The additional risk contribution from RHR-MOV-25A and RHR-MOV-53A is negligible.

As documented in Assumptions 4, 5, and 6, the analyst created a linked event tree model, using the Systems Analysis Programs for Hand-on Integrated Reliability Evaluation (SAPHIRE) software provided by the Idaho National Laboratory, to evaluate the risks related to fire-induced main control room abandonment at the Cooper Nuclear Station. This linked event tree was used to evaluate the increased risk from the subject performance deficiency during the response to postulated fires in the main control room, the auxiliary relay room, the cable spreading room, the cable expansion room or Fire Area RB-FN. The primary event tree used in this model is displayed as Figure 1 in the Attachment.

As documented in Assumption 5, the analyst used an event tree to evaluate the likelihood of operator recovery via either restoration of HPCI or manually opening Valve RHR-MO-25B. The resulting non-recovery probability was 1.01E-3. The derivation of this result is discussed below. This result applied only to sequences where HPCI provides injection flow. In cases where HPCI fails or is not available, there is much less time available to recover from the failure. For this case, a SPAR-H evaluation was performed, and is discussed below.

Note: In the 2008 analysis, the non-recovery probability for HPCI success sequences was determined to be 7.9E-2. This non-recovery probability was decreased by a factor of 78 for the current finding because of changes that were made to Procedure 5.4 FIRE-S/D. These changes directed operators to close SRVs if RHR injection was not observed to be successful. Also, it directed operators to delay securing HPCI until RHR injection is confirmed.

In the 2008 analysis, recovery credit was only applied to sequences that contained an early success (lack of failure or unavailability) of HPCI. This is because with the use of HPCI, a considerable amount of decay heat is removed prior to the point of attempting to open RHR-MOV-25B in Procedure 5.4 FIRE-S/D, and ample time is available to diagnose the failure and manually open the valve prior to fuel damage. Also, HPCI can be re-initiated in these cases to maintain reactor parameters, and the new procedures instruct operators to keep HPCI online until low-pressure injection is confirmed. However, if HPCI is out of service for maintenance or experiences a failure, the only success path is to establish RHR low pressure injection and the time available is very limited. According to the licensee's MAAP analysis, incipient core damage will occur 15 minutes after RHR-MOV-25B fails to open unless it is opened (manually) by that time. For early HPCI failures, it is assumed in this analysis (consistent with the 2008 analysis) that there is enough time to reach the step in Procedure 5.4 FIRE-S/D where RHR-MOV-25B is opened. If it fails to open (1.2E-2 in the base case, 1.0 in the condition case), operators have 15 minutes to diagnose the situation (injection failure) and develop a strategy that includes visually checking the position of RHR-MOV-25B and opening it manually to at least 23 hand wheel turns to get sufficient flow to prevent core damage.

The analyst considered whether changes to Procedure 5.4 FIRE-S/D subsequent to

the 2008 risk analysis could allow some recovery credit to be applied to sequences involving early HPCI failure in the current analysis. One possible reason to do this is that the revised procedure directs the operator at the alternative shutdown panel to close SRVs in the event that RHR injection cannot be verified. This would have the effect of delaying the depletion of water inventory in the core. However, the diagnosis of this situation would likely take a long time. The operator at the alternative shutdown panel would be difficult to determine quickly, whether low pressure injection was successful because of a lack of direct indication (total RHR flow is displayed, but the effect of successful injection would only be a slight increase in the total RHR flow rate until Valve RHR-MO-34B is throttled closed to divert the flow that was previously directed to the suppression pool). The reactor level indication would likely be the first indication of unsuccessful injection, but a lowering level could well be misinterpreted as a shrink from the injection of colder water. Also, if the operator used the alternative method prescribed in the procedure, which is used when nitrogen pressure is determined to be reliably available, he is directed to use SRVs to maintain pressure within a band of 150-200 psig. This could result in masking the lowering level from a lack of injection. For these reasons, the analyst determined that recovery for early HPCI failure sequences would be challenging.

A SPAR-H evaluation was performed to estimate a non-recovery probability for HPCI failure sequences. All non-nominal PSFs are shown in the following table:

	Diagnosis (nominal =1.0E-2)	Action (nominal = 1.0E-3)
Available Time	Barely Adequate (2/3 nominal) (10)	Time Required (10)
Stress	High (2)	High (2)
Complexity	Moderate (2)	Nominal
Experience/Training	Nominal	High (0.5)
Procedures	Poor (5)	Nominal
Ergonomics	Nominal	50% Poor, 50% nominal (5.5)
Total PSF Product	200	55
HEP	0.67	0.05
Total HEP	0.72	

The licensee's thermal-hydraulic analysis indicated that approximately 15 minutes of time would be available to open RHR-MOV-25B enough turns to provide adequate core flow after the step in the procedure to open RHR-MOV-25B failed. The analyst assumed that a nominal time to diagnose the problem is 15 minutes and the nominal time to close the valve is 5 minutes. The available 15 minutes was partitioned with 10 minutes for diagnosis and 5 minutes for action. This explains the selection of the factors above for available time for both diagnosis and action.

Stress would be high in both cases. For diagnosis, complexity was considered to be moderate because of the need to observe several indications while following a procedure that only addresses successful operation of the equipment and that directs further actions to be taken that are unrelated to diagnosing equipment failures. In addition, procedures for diagnosis were considered to be poor because of a lack of direction to the operator at the alternative shutdown panel to check the position of RHR-MOV-25B if a reactor vessel rise is not observed. Although there is a procedural step for the reactor building operator to check the valve position, it is specifically prescribed for cable spreading room fires only, and it is not clear that he would do this for other alternative shutdown fires unless directed by the operator at the alternative shutdown panel. The analyst considered experience and training to be high for MOV manual operations at the plant because it is a frequently performed task. Ergonomics for action were divided half and half between poor and nominal because it would take an unusually large force to open the valve against the full shutoff head of the RHR pump. In addition, there is a somewhat unfavorable geometry for this operation.

Procedure 5.4 FIRE-S/D, Attachment 2, Step 1.20.7 instructs the reactor building operator to verify that RHR-MOV-25B is open if the fire is in the cable spreading room. If the valve is observed to not be open, Step 1.20.8 instructs the operator to open the breaker and manually open the valve. There is some uncertainty as to whether the operator would proceed with Step 1.20.8 (after correctly skipping Step 1.20.7) if the fire was not in the cable spreading room. The analyst concluded that the text of Step 1.20.8 ("If the valve did not operate, perform following..") is written in such a way that it presumes that the operator has performed the valve position verification of Step 1.20.7. Therefore, if Step 1.20.7 is skipped, it would be logical to mark Step 1.20.8 "N/A."

The analyst concluded that the recovery probability for cable spreading room fires would be nominal because it involves a direct observation of the valve position, followed by a well-trained and proceduralized evolution. Therefore, for cable spreading room fires, the non-recovery probability was assigned a value of 1.1E-2 (nominal SPAR-H value). Unlike the value used for "action" in the SPAR-H tabulation above, in this case there would be extra time available for the operator to open the valve manually because no time would be needed for diagnosis. For all other fire areas that cause alternative shutdown, the non-recovery value of 0.72 was used as discussed above. The following table summarizes the recovery assumptions:

	Non-Recovery Value
HPCI Success	1.01E-3
Early HPCI Failure Cable Spreading Room	1.1E-2
Early HPCI Failure All Other ASD Areas	0.72

Using the linked event tree model described in Assumption 4, the analyst calculated the Condition CDF as 7.79E-6/yr. The base CDF was 5.81E-6/yr. With a one-year exposure time, the delta-CDF is 2.0E-6/yr. Almost all of the risk (approximately 99%) resulted from sequences that involve alternative shutdown fires (other than the cable spreading room) that include early failures or unavailability of HPCI.

The dominant cutsets are shown below in Table 2.

Table 2
Main Control Room Abandonment Sequences

Postulated Fire	Sequence	Mitigating Functions	Results
Auxiliary Relay Room	4-01-12	Early Failure of HPCI Failure to Open MO-25B	1.3×10^{-6}/yr
Main Control Room	3-01-12	Early Failure of HPCI Failure to Open MO-25B	3.4×10^{-7}/yr
Auxiliary Relay Room	4-31-1-1-1-1-12	Early Failure of HPCI Failure to Open MO-25B	1.8×10^{-7}/yr
Main Control Room	3-31-1-1-1-1-12	Early Failure of HPCI Failure to Open MO-25B	4.6×10^{-8}/yr
Auxiliary Relay Room	4-01-03	Early Failure of HPCI Failure to Open MO-25B	3.4×10^{-8}/yr

The following text from the 2008 analysis discusses the derivation of the control room abandonment frequency. This information was considered applicable to the current evaluation.

Control Room Abandonment Frequency

NUREG/CR-2258, "Fire Risk Analysis for Nuclear Power Plants," provides that control room evacuation would be required because of thick smoke if a fire went unsuppressed for 20 minutes. Given Assumption 6 and assuming that a fire takes 2 minutes to be detected by automatic detection and/or by the operators, there are 18 minutes remaining in which to suppress the fire prior to main control room evacuation being required. NRC Inspection Manual Chapter 0609, Appendix F, Table 2.7.1, "Non-suppression Probability Values for Manual Fire Fighting Based on Fire Duration (Time to Damage after Detection) and Fire Type Category," provides a manual non-suppression probability (P_{NS}) for the control room of 1.3×10^{-2} given 18 minutes from time of detection until time of equipment damage. This is a reasonable approach, although fire modeling performed by the licensee indicated that 16 minutes was the expected time to abandon the main control room based on habitability.

In accordance with Inspection Manual Chapter 0609, Appendix F, Task 2.3.2, the analyst used a severity factor of 0.1 for determining the probability that a postulated fire would be self sustaining and grow to a size that could affect plant equipment.

Given these values, the analyst calculated the main control room evacuation frequency for fires in the main control room (F_{EVAC}) as follows:

$$F_{EVAC} = P_{FIF} * SF * P_{NS}$$

$$= 6.88 \times 10^{-3}/yr * 0.1 * 1.3 \times 10^{-2}$$

$$= 8.94 \times 10^{-6}/yr$$

In accordance with Procedure 5.4 FIRE-S/D, operators are directed to evacuate the main control room and conduct a remote shutdown, if a fire in the main control room or any of the four areas documented in Assumption 8, if plant equipment spuriously actuates/de- energizes equipment, or if instrumentation becomes unreliable.

Therefore, for all scenarios except a postulated fire in the main control room, the probability of non- suppression by automatic or manual means are documented in Table 3, below.

Table 3
Control Room Abandonment Frequency

Fire Area	Ignition Frequency (per year)	Severity	Automatic Suppression	Manual Suppression	Abandonment Frequency (per year)
Main Control Room	6.88×10^{-3}	0.1	none	1.3×10^{-2}	8.94×10^{-6}
Auxiliary Relay Room	1.42×10^{-3}	0.1	none	0.24	3.41×10^{-5}
Cable Expansion Room	1.69×10^{-4}	0.1	2×10^{-2}	0.24	8.11×10^{-8}
Cable Spreading Room	4.27×10^{-3}	0.1	5×10^{-2}	0.24	5.12×10^{-6}
Reactor Building 903' (RB-FN)	1.43×10^{-3}	0.1	2×10^{-2}	0.24	6.86×10^{-7}
Total MCR Abandonment:					4.89×10^{-5}

The licensee's total control room abandonment frequency was 1.75×10^{-5}. For the main control room fire, the licensee's calculations were more in-depth than the analyst's. The remaining fire areas were assessed by the licensee using IPEEE data. However, the following issues were noted with the licensee's [2008] assessment:

Kitchen fires were not included in licensee's evaluation

- *This would tend to increase the ignition frequency*
- *This might add more heat input than the electrical cabinet fires modeled by the licensee*

Habitability Forced Abandonment

- *Non-suppression probability did not account for fire brigade response time or the expected time to damage.*
- *Reduced risk based on 3 specific cabinets causing a loss of ventilation early, when it should have increased the risk. Fire modeling showed that fires in these cabinets could damage nearby cables and cause ventilation damper(s) to close.*
- *Risk Assessment Calculation ES-91 uses an abandonment value of 9.93×10^{-7}. However, the supporting calculation performed by EPM used 3.02×10^{-6}.*

Equipment Failure Control Room Abandonment

- *Criteria for leaving the control room did not accurately reflect the guidance that was proceduralized.*

- *The evaluation of the Cable Expansion Room stated that the only fire source was self-ignition of cables. This was modeled as a hot work fire, and it included a probability that administrative controls for hot work and fire watches would prevent such fires from getting large enough to require control room abandonment. This is inappropriate for self-ignition of cables, since there would not really be any fire watch present. Adjusting for this would increase the risk in this area by two orders of magnitude.*

- *The licensee concluded that fires in equipment in the four alternative shutdown fire areas outside the main control room (see Assumption 8) would not result in control room abandonment without providing a technical basis. The licensee's Appendix R analysis concluded that fire damage in these rooms require main control room evacuation to prevent core damage.*

The analyst used the main control room abandonment frequencies documented in Table 3. In addition, sensitivities were run using the licensee's values.

Recovery Following Failure of Valve RHR-MO-25B (HPCI success sequences only)

As noted above, the recovery value determined in the 2008 analysis was 7.9E-2. The following table presents the revised split fractions based on the improvements to Procedure 5.4 FIRE-S/D.

Table 4
Split Fractions for RECOVERY-PATH

Top Event	How Assessed	Failure Probability
LEVEL-DOWN	SPAR-H (Diagnosis Only)	1.75E-4
SRV-STATUS	SPAR-H (Diagnosis Only)	1.75E-3
CLOSE-SRVS	SPAR-H (Action Only)	4.38E-4
RESTORE-HPCI	SPAR-H (Combined)	7.0E-4
OPEN-MO-25B	SPAR-H (Combined)	2.89E-1

Using the event tree in Figure 2 and the split fractions in Table 4, the analyst calculated a combined non-recovery probability of 1.01E-3.

The licensee's combined non-recovery probability was 4.0 x 10^{-3}. **[Note: this value is based on the licensee's evaluation before the aforementioned improvements were made to the procedure].** *The licensee used a similar approach to quantify this value. However, the licensee assumed that operators would always shut the safety-relief valves upon determining that reactor pressure vessel water level was decreasing. The analyst assumed that some percentage of operators would continue to follow the procedure and attempt to recover from the failed RHR valve or try alternative methods of low-pressure injection. In addition, the analyst identified the following issues that impacted the licensee's analysis:*

The inspectors determined that it would require 112 ft-lbs of force to manually open Valve RHR-MO-25B. The analyst determined that this affected the ergonomics of this recovery. Some operators may assume that the valve is on the backseat when large forces are required to open it. Some operators might be incapable of applying this force to a 2-foot diameter hand wheel.

The analyst noted that the following valves would be potential reasons for lack of injection flow and/or may distract operators from diagnosis that Valve RHR-MO-025B is closed:

- *RHR-81B, RHR Loop B Injection Shutoff Valve, could be closed.*
- *RHR-27CV, RHR Loop B Injection Line Testable Check Valve, could be stuck closed.*
- *RHR-MO-274B, Injection Line Testable Check Valve Bypass Valve, could be opened as an alternative.*
- *Operators could search for an alternative flow path.*

The licensee's [2008] evaluation did not include sequences involving the failure of the HPCI system shortly after main control room evacuation in their risk evaluation. These sequences represented approximately 26 percent of the ΔCDF as calculated by the analyst. These sequences are important for the following reasons:

- *Failure of HPCI leads to the need for operators to rapidly depressurize the reactor to establish alternative shutdown cooling. Decay heat will be much higher than for sequences involving early HPCI success. Also, depressurization under high decay heat and high temperature result in greater water mass loss. This will significantly reduce the time available for recovery actions.*
- *HPCI success sequences provide long time frames available with HPCI operating. This reduces decay heat, increases time for recovery, and permits the establishment of an emergency response organization. Those factors are not applicable to early HPCI failure sequences.*

The basis for operating HPCI was not well documented by the licensee. During many of the extended sequences, suppression pool temperature went well above the operating limits for HPCI cooling and remained high for extended periods of time. The following facts were determined through inspection:

- *The design temperature for operating HPCI is 140°F based on process flow providing oil cooling.*
- *General Electric provided a transient operating temperature of 170°F for up to 2 hours.*

In the licensee's best case evaluation of the performance deficiency, the suppression pool would remain above 150°F for 10.6 hours.

The licensee used a case-specific combined recovery in assessing the risk of this performance deficiency. Most of the recoveries discussed by the licensee would have been available with or without the performance deficiency. Therefore, these should be in the baseline model and portions of the sequences subtracted from the case evaluation. This is the approach used by the analyst in the linked event trees model.The licensee stated during the regulatory conference that credit should be given for diesel-driven fire water pump injection. This is one of the licensee's alternative strategies. However, the inspectors determined, and the licensee concurred, that this alternative method of injection requires that Valve RHR-MO-25B be open. Therefore, no credit was given for this alternative strategy.

Conclusions:

The analyst concluded that the performance deficiency was of low to moderate significance (White). As documented in Table 1, for a period of exposure of 1 year, the analyst determined a best estimate ΔCDF for fire scenarios that did not require evacuation of the main control room of less than 1.0E-7/yr. using both quantitative and qualitative techniques. Additionally, using the linked event tree model described in Assumption 4 for a period of exposure of 1 year, the analyst calculated the ΔCDF to be 2.0E-6/yr. for postulated fires leading to the abandonment of the main control room. This resulted in a total best estimate ΔCDF of 2.0E-6/yr.

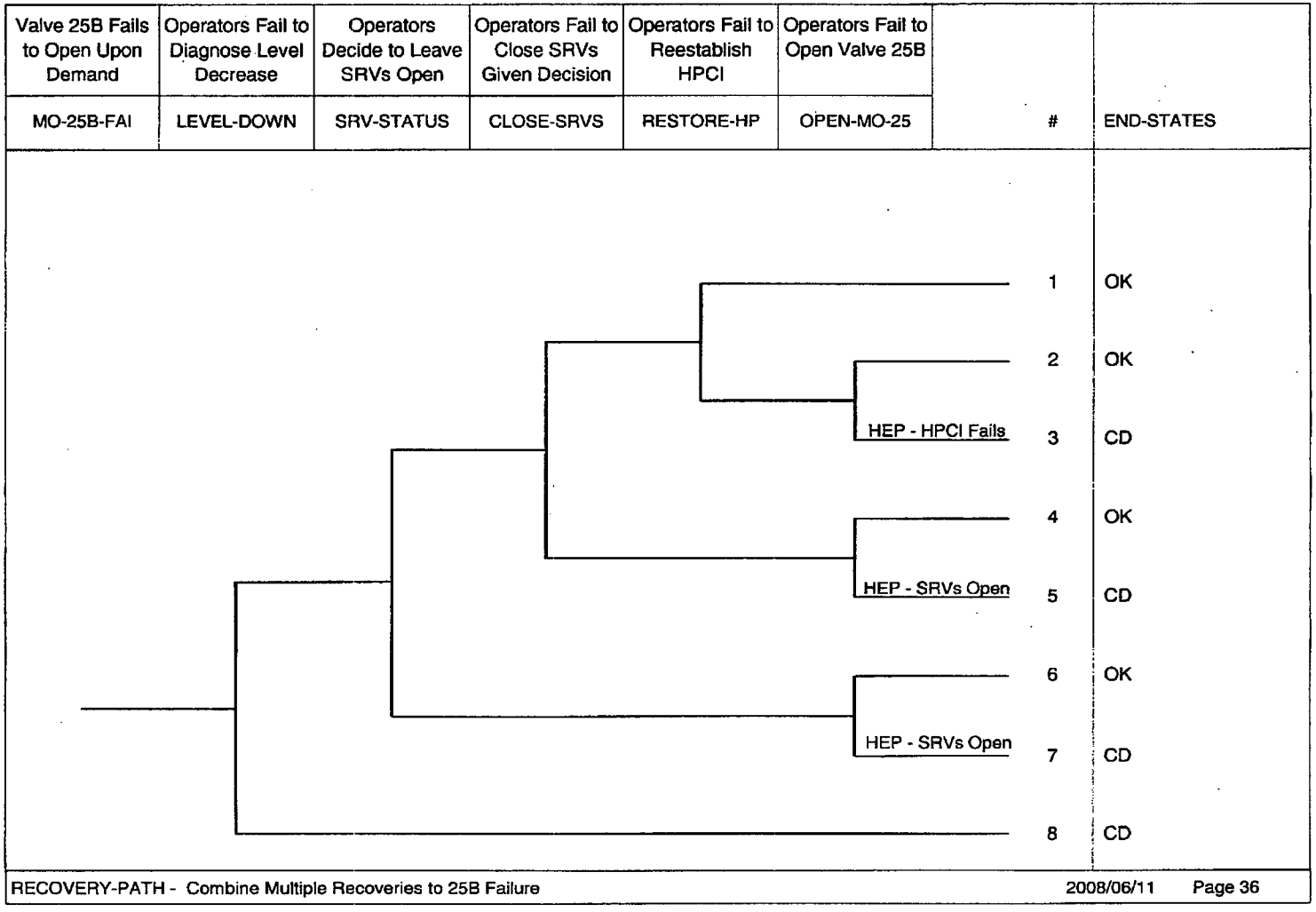
Figure 1

Reactor Shutdown from Alternate	Failure to Establish AC Power	Failure to Establish Level and Pressure	Failure to Establish Torus Cooling	Failure to Properly Cool the Reactor	Failure to Establish Shutdown Cooling	Failure to Reestablish HPCI Before CD	#	END-STATES
REMOTE_SD	ASD-EPS	ASD-HPSI	ASD-SPC	ASD-COOL	ASD-SDC	ASD-REHEAT		
							1	OK
							2	OK
							3	CD
							4	OK
							5	CD
							6	OK
							7	OK
							8	CD
							9	CD
					Depress Only		10	OK
						HPCI Recover Only	11	OK
							12	CD
							13	CD
							14	CD
							15	CD

REMOTE-SD -

2008/06/11

Figure
2


Valve 25B Fails to Open Upon Demand
Operators Fail to Diagnose Level Decrease
Operators Decide to Leave SRVs Open
Operators Fail to Close SRVs Given Decision
Operators Fail to Reestablish HPCI
Operators Fail to Open Valve 25B
MO-25B-FAI
LEVEL-DOWN
SRV-STATUS
CLOSE-SRVS
RESTORE-HP
OPEN-MO-25
#
END-STATES
HEP - HPCI Fails
HEP - SRVs Open
HEP - SRVs Open
1 OK
2 OK
3 CD
4 OK
5 CD
6 OK
7 CD
8 CD
RECOVERY-PATH - Combine Multiple Recoveries to 25B Failure
2008/06/11
Page 36

Beasley, Benjamin

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 2:58 PM
To: Kokajko, Lawrence
Subject: RE: Response to voicemail message on Pre-GI-009 panel

Thank you.

Ben

From: Kokajko, Lawrence
Sent: Thursday, March 17, 2011 2:57 PM
To: Beasley, Benjamin
Cc: Perkins, Richard; Compton, Keith; Davis, Jack
Subject: RE: Response to voicemail message on Pre-GI-009 panel

As this aligns with my agreement with Christiana Lui, I approve Keith Compton's participation in the Pre-GI-009 panel. Anything outside the agreed upon parameters will require reassessment.

From: Beasley, Benjamin
Sent: Thursday, March 17, 2011 1:33 PM
To: Kokajko, Lawrence
Cc: Perkins, Richard
Subject: Response to voicemail message on Pre-GI-009 panel

Lawrence,

The email yesterday requesting approval for Keith Compton to serve on the Pre-GI-009 screening panel is the same activity that Christiana Lui discussed with you a few months ago. Preparation of the screening analysis has required more time than we anticipated but we now have a completed report and are ready to begin the screening panel activities.

The scope of the screening panel work has not changed. We anticipate something between 5 and 25 hours of time from each panel member over the next 4 to 8 weeks.

Regards,
Ben Beasley

AG/181

From: RES_OpPlan@nrc.gov
To: Coyne, Kevin
Subject: ACTION REQUIRED - OpPlan: Modified Milestone
Date: Thursday, March 17, 2011 3:12:12 PM
Importance: High

RES Milestone has been Modified

View Milestone | Approve / Reject

Kevin Coyne

The purpose of this email is to notify you that there has been a modification to a milestone assigned to the RES/DRA/PRAB by Michelle Gonzalez on 3/17/2011 3:11:58 PM. Please approve or reject the changes using the "Approve/Reject" link above. If rejected, milestones values will return to the previous version automatically.

If you have any questions, please contact your supervisor.

User Need ID	NRO-2008-002
User Need Title	Development of Standardized Plant Analysis Risk Models for New Reactors
Milestone Description	Document the ABWR SPAR Model and the comparison of the result

Changes	**Previous Value**	**Proposed Value**
Current Due Date	~~1/30/2011 12:00:00 AM~~	5/31/2011 12:00:00 AM

AG/182

From: Parks, Benjamin
To: Mendiola, Anthony; Bahadur, Sher; Ruland, William; Cruz, Holly
Subject: FYI - Harris informed that NRC will deny request to implement AREVA RLBLOCA (EMF-2103)
Date: Thursday, March 17, 2011 3:17:46 PM

Please be aware that the NRC staff conducted a teleconference with Progress Energy this afternoon to discuss the request to implement EMF-2103, Realistic Large Break LOCA, at Harris Nuclear Plant.

Progress was informed that the request will be denied if not withdrawn.

The action has been briefed thru Sher and Joe Giitter. (Bill – I sense you're a little busy right now, but I can certainly fill you in; let me know.)

I am communicating this to all of you in case anyone's phone rings with AREVA on the line.

Benjamin T. Parks
Reactor Systems Branch, NRR
O10-D2 415-6472

AG/183

From:	Fortnightly"s Green Utility
To:	Leeds, Eric
Subject:	Solar Dawn
Date:	Thursday, March 17, 2011 3:17:53 PM

Research efforts advance the business case for photovoltaics. See full article, "Solar Dawn," at Fortnightly's Green Utility

Having trouble viewing this email? Click here

FORTNIGHTLY'S GREEN UTILITY
e-Text Newsletter
March 17, 2011

Solar Dawn

Solar photovoltaics (PV) facilities represent less than 1 percent of the nation's generation assets, but as PV costs drop, solar will inevitably become a bigger part of the mix. PV, of course, isn't a single technology, but an ever-growing cluster of methods to capture solar energy, and each comes with its own set of variables, pros and cons. NREL analyst Michael Woodhouse spoke with *Fortnightly's Green Utility* about the current state of PV research and the ongoing effort to drive down cost. READ MORE

RELATED ARTICLES

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PREVIOUSLY IN GREEN UTILITY

Renewable Tax & Spend

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Making the Case for Ocean Thermal Energy

AG/184

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Dependence on fossil fuels results in economic and strategic challenges. Innovations in systems integration, procurement and advanced manufacturing help achieve energy independence with clean, renewable energy generation solutions. PLAY VIDEO

FORTNIGHTLY'S GREEN UTILITY -- EXCLUSIVE SPONSOR: Lockheed Martin

Owen, Lucy

From: Trifiletti, Sue
Sent: Thursday, March 17, 2011 3:26 PM
To: Collins, Elmo; Howell, Art; Caniano, Roy; Kennedy, Kriss; Cain, Chuck; Pruett, Troy; Spitzberg, Blair; Walker, Wayne; Brookhart, Lee; Everett, Vincent; Williams, Megan; Denissen, Christie; Kramer, John; Tindell, Brian; Proulx, David; Sanner, Sue; Dricks, Victor; Uselding, Lara; Herrera, Marisa; Staab, Christopher; Fuller, Karla; Weil, Jenny; Maier, Bill
Subject: IR05000445/2011-008; 05000446/2011-008; 07200074/2010001 Luminant Generation Company LLC ML110760665
Attachments: SCAN2579_000.pdf

Sue Trifiletti
US NRC RIV DNMS
Branch Secretary
817/860-8190

Fear less, hope more;
Eat less, chew more;
Whine less, love more;
And all good things are yours.

AG/185

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

March 17, 2011

Rafael Flores
Senior Vice President
and Chief Nuclear Officer
Luminant Generation Company LLC
Comanche Peak Nuclear Power Plant
P.O. Box 1002
Glen Rose, TX 76043

SUBJECT: NRC INSPECTION REPORT 05000445/2011008; 05000446/2011008; 07200074/2010001

Dear Mr. Flores:

Between December 7, 2010, and January 4, 2011, the U.S. Nuclear Regulatory Commission conducted an inspection at your Comanche Peak Nuclear facility. The inspection involved site visits on three separate occasions to your facility. The purpose of these combined inspections was to review the planning and construction of the Independent Spent Fuel Storage Installation (ISFSI) pad at Comanche Peak. On February 7, 2011, an exit briefing was conducted with members of your staff after receipt by the NRC of the 28-day concrete break test results for the first section of the pad. The enclosed report presents the scope and results of the inspections performed.

The inspections included a review of the ISFSI foundation subgrade, concrete mix design, inspection of the concrete batch plant, inspection of concrete forms and placement of the reinforcing steel, and observation of concrete mixing, delivery, sampling, and placement for the first of three sections of the ISFSI pad. The inspection determined that Comanche Peak's ISFSI pad construction was in conformance with the requirements of the Holtec Final Safety Analysis Report and the requirements and standards established by the American Concrete Institute (ACI) and the American Society for Testing and Materials (ASTM), as required by your general license. No violations were identified during the inspections.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/Adams.html. To the extent possible, your response, if any, should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact the undersigned at 817-860-8191 or Lee Brookhart at 817-276-6549.

Sincerely,

D. Blair Spitzberg, Ph.D., Chief
Repository and Spent Fuel Safety Branch

Docket: 050-445
050-446
072-074
License: NPF-87
NPF-89

Enclosures:
NRC Inspection Report 05000445/2011008; 05000446/2011008; 07200074/2010001
Attachments:
(1) Supplemental Inspection Information
(2) Comanche Peak ISFSI - Inspector Notes

cc w/enclosure:
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Oversight and Regulatory Affairs
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Federal Emergency Management Agency
Department of Homeland Security
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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	050-445; 050-446; 072-074
License:	NPF-87; NPF-89
Report:	050-445/2011-08; 050-445/2011-08; 072-074/2010-01
Licensee:	Luminant Generation Company LLC Independent Spent Fuel Storage installation (ISFSI)
Facility:	Comanche Peak Nuclear Power Plant, Units 1 and 2
Location:	FM-56, Glen Rose, TX
Dates:	December 7, 2010; Onsite December 27, 2010; Onsite January 4, 2010; Onsite
Inspectors:	V. Everett, RIV/DNMS, L. Brookhart, RIV/DNMS M. Williams, RIV/DRS C. Denissen, RIV/DRS
Approved By:	D. B.Spitzberg, Ph.D., Chief Repository and Spent Fuel Safety Branch, Region IV
Attachments:	1. Supplemental Inspection Information 2. Inspector Notes

EXECUTIVE SUMMARY

Comanche Peak Independent Spent Fuel Storage Installation
NRC Inspection Report 05000445/2011008; 05000446/2011008; 07200074/2011001

The Comanche Peak Independent Spent Fuel Storage Installation (ISFSI) is under a general license from the U.S. Nuclear Regulatory Commission (NRC). The ISFSI has been designed to hold up to 84 storage casks on the ISFSI pad. The ISFSI pad was approximately 102 feet wide, 262 feet long, and 25 inches thick. The licensee had elected to use a Holtec dry cask storage system, Certificate of Compliance 1014, "HI-STORM 100," Amendment 7, and Revision 9 of the Final Safety Analysis Report (FSAR). The MPC-32 multi-purpose canister and Hi-Storm 100S Version B cask will be used.

The ISFSI concrete pad was designed and constructed in accordance with American Concrete Institute (ACI) 349, "Code Requirements for Nuclear Safety Related Concrete Structures." The inspection included a review of the concrete mix design, concrete material requirements, reinforcing bar specifications, and concrete batch plant facility along with direct observation of the concrete mixing, placement, and sampling of the north section of the pad.

The ISFSI pad was constructed in three sections, a north, a center, and a south section. During this inspection, the north section of the ISFSI pad was poured. The concrete volume was calculated at approximately 730 cubic yards per section. Seventy-two trucks, containing approximately 10 cubic yards of concrete each, were used in the north section. The concrete was provided by Ingram Enterprises from their batch plant in Glen Rose, TX. The concrete placement was performed by Osburn Contractors.

Details related to the activities observed are provided in Attachment 2, "Inspector Notes," to this report. The following provides a summary of the observations made during this inspection.

Cold Weather Requirements

- Adequate measures were taken by the licensee, during placement, to ensure the concrete was maintained above the 50°F requirement specified in the ACI (Attachment 2: Topic – Protection During Cold Weather).

Concrete Curing

- The ACI requirement for maintaining the concrete in the ISFSI pad in a moist condition and above 50°F for a minimum of 7 days after placement was met (Attachment 2: Topic – Concrete Temperature).

Concrete Mixing & Delivery

- The ready mix concrete batch plant and the concrete trucks used for mixing the concrete had been inspected by the licensee and found to meet the requirements of ASTM C 94 (Attachment 2: Topic – Ready Mix Concrete).

- The applicable ASTM standards for concrete mixing and delivery were met with respect to addition of water at the job site, maximum time, and drum revolutions between leaving the batch plant and discharging the concrete, and minimum drum revolutions for mixing (Attachment 2: Topics – Concrete Mixing; Addition of Job Site Water; Concrete Mixing Revolutions; Conveying; and Drum Rotation Discharge Limits).

Concrete Placement

- The concrete forms were constructed and prepared for concrete placement in accordance with ACI standards with respect to wetting of the interior surfaces prior to concrete placement, removing debris, controlling mortar leaks and deflection, applying release agents to the interior of forms, wetting of masonry units, and removing standing water (Attachment 2: Topics – Formwork; Formwork Coating; Masonry Units; Reinforcement Cleanliness; Reinforcement Condition; Removal of Debris; Standing Water Removal).

- The applicable ACI standards for concrete placement were met with respect to exclusion of foreign materials, placement rates, and minimizing course aggregate segregation (Attachment 2: Topic – Deposition to Avoid Segregation; Foreign Material in Concrete; Placement Rate).

Concrete Quality

- The concrete mix met the design specifications for air entrainment, slump and water/cement ratio (Attachment 2: Topics – Air Content; Water/Cement Ratio; and Slump Tolerances under Category: Concrete Testing).

- Fly ash was added to the concrete mix to compensate for the higher alkali levels in the local aggregate used in the concrete mix. Water soluble chlorides were tested and were within the ACI 349 limits (Attachment 2: Topics – Aggregate Specifications; Corrosion Protection; Fly Ash).

Concrete Reinforcement

- In general, rebar placement was constructed in accordance with ACI standards to establish a minimum concrete cover over the steel to protect the rebar from corrosion in accordance with the pad design. One small area did not meet the design requirement and was analyzed and found to be acceptable (Attachment 2: Topics – Reinforcement Cover for Rebar Exposed to Earth; Reinforcement Cover for Rebar on Top).

- Rebar tensile strength test reports were reviewed and all rebar used in the pad was found to meet the 60 thousand pounds per square inch (ksi) design requirement (Attachment 2: Topics – Reinforcement Tensile Tests).

Concrete Testing

- Both the ACI and ASTM standards for concrete sampling were met with respect to sampling locations, methods, frequencies, number of samples, and methods for molding

and curing strength test cylinders (Attachment 2: Topic – Initial (Temporary) Sample Storage; Strength Test Minimum Samples; Strength Test Sample Locations; Strength Test Sampling Time Limit).

- The concrete sampling activities were performed in accordance with the requirements of ASTM C 172. The field technicians responsible for sampling and making the concrete test cylinders were certified as ACI Grade I Field Testing Technicians (Attachment 2: Topic – Field Technician Requirements; Making and Curing Strength Test Specimens).

Corrective Action Program

- Conditions adverse to quality, nonconforming conditions, failures, malfunctions, deficiencies, deviations, defects, adverse trends, lessons learned at other facilities, and work enhancements were examples of issues identified and resolved through Comanche Peak's Corrective Action Process (Attachment 2: Topic – Condition Reports).

Pad Design

- Documentation, calculations, and drawings of the ISFSI pad were consistent with the design requirements in the Holtec FSAR for thickness, reinforcing steel yield strength and configuration, and soil subgrade modulus of elasticity (Attachment 2: Topic – Design Specifications for Rebar; Pad Thickness; Placement of Rebar; Subgrade Effective Modulus of Elasticity).

- The 28-day concrete compressive strength test results for the first concrete placement activities were within the limits specified in the FSAR of less than 6,000 pounds per square inch (psi) (Attachment 2: Topic – Concrete Compressive Strength at 28 Days).

- Seismic analysis was performed for the pad to demonstrate adequate support for static and dynamic loads for the Comanche Peak site (Attachment 2: Topic – Seismic Analysis for Static and Dynamic Loads).

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel:

S. Bernhoft, Project Engineering Manager
B. Henley, Project Manager
D. Kross, Acting VP Engineering
C. Montgomery, Project Engineering Manager
J. Seawright, Consulting Engineer Licensing
R. Swanson, Senior Nuclear Auditor

Contract Personnel:

J. Fosdick, Adjunct Site Services Manager, Holtec International
S. Watson, Project Manager, Rone Engineering Services

INSPECTION PROCEDURES USED

60853	On-Site Fabrication of Components and Construction of an ISFSI

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened
None

Closed
None

Discussed
None

LIST OF ACRONYMS
(including Attachment 2)

ACI	American Concrete Institute
ANSI	American National Standards Institute
ASTM	American Society for Testing and Material
CFR	Code of Federal Regulations
CMTR	Certified Mill Test Report
DNMS	Division of Nuclear Material Safety
DRS	Division of Reactor Safety
EDCR	Engineering Design Change Request
F	Fahrenheit
FNCR	Field Non-Conformance Report
FSAR	Final Safety Analysis Report
HPP	Holtec Project Procedure
ISFSI	Independent Spent Fuel Storage Installation
ITS	important to safety

ksf	thousand pounds per square foot
lb/cu. ft	pound per cubic foot
MPC	multi-purpose canister
NRC	Nuclear Regulatory Commission
psi	pounds per square Inch
QA	Quality Assurance
Rev	revision
RIV	NRC Region IV office
RSFS	Repository and Spent Fuel Safety
SFST	Spent Fuel Storage and Transportation
SSE	safe shutdown earthquake
TxDOT	Texas Department of Transportation

ATTACHMENT 2

COMANCHE PEAK ISFSI PAD INSPECTION

COMANCHE PEAK ISFSI PAD INSPECTION

Category: Cold Weather Requirements **Topic:** Frost

Reference: ACI 349, Section 5.12.2

Requirement: All concrete materials and all reinforcement, forms, fillers, and ground with which concrete is to come in contact shall be free from frost.

Finding: Visual inspection of the pour area within the forms conducted the morning of the actual pad pour, January 4, 2011, verified the subgrade was not frozen, and all reinforcement, forms, fillers, and ground was free from ice and frost.

Documents Reviewed: None

Category: Cold Weather Requirements **Topic:** Protection During Cold Weather

Reference: ACI 349, Section 5.12.1

Requirement: Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather.

Finding: The licensee provided adequate equipment and kept the concrete above the required 50 degrees F during concrete pour, placement, and curing. The temperature the day of the pour was between 49 and 53 degrees F. Design Specification 03300, Section 3.4 C, required the temperature of the concrete, at the time of delivery at the point of placement, to be kept within the range of 50 to 90 degrees F unless otherwise approved by the construction manager. Design Specification 03300, Section 3.4 E, required, for placement of concrete in ambient temperatures below 40 degrees F, adequate protection of the concrete after placement shall be provided by covering, insulating, and/or heating, to maintain a minimum concrete temperature of 50 degrees F for 7 days after placing. The measured temperature of the concrete during the pour was between 53 and 66 degrees F. After the concrete placement was completed, blankets were used to keep the concrete above 50 degrees F and to protect the water, used for curing purposes, on top of the concrete from evaporating due to the wind.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0

Category: Concrete Curing **Topic:** Concrete Temperature

Reference: ACI 349, Section 5.11.1

Requirement: Concrete (other than high-early-strength) shall be maintained above 50 degrees F and in a moist condition for at least the first 7 days after placement, except when cured in accordance with 5.11.3 (Accelerated Curing).

Finding: The licensee regulated and maintained the concrete temperature above 50 degrees F and maintained the concrete in a moist condition for 7 days. Design Specification 03300, Section 3.7 C, required curing for 7 days by addition of water methods. Design Specification 03300, Section 3.4 E, required adequate protection of the concrete after placement shall be provided by covering, insulating, and/or heating, to maintain a minimum concrete temperature of 50 degrees F for 7 days after placing. The concrete

was kept moist by keeping a layer of water over the concrete for the 7 days. Blankets were used by the licensee to keep the concrete above 50 degrees F and to protect the water on top of the concrete from evaporating due to wind.

Documents Reviewed: (a) Holtec Procedure HSP-186 "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8; (b) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0

Category: Concrete Mix & Delivery **Topic:** Concrete Mixing Revolutions

Reference: ASTM C 94, Section 12.5

Requirement: Concrete that is completely mixed in a truck mixer will be mixed at 70 to 100 revolutions at the mixing speed designated by the manufacturer to produce the uniformity of concrete. Additional revolutions by the mixer beyond the number found to produce uniformity of concrete shall be at a designated agitating speed.

Finding: The concrete was being mixed properly and met the minimum 70 to 100 revolutions to produce uniform concrete. Holtec Procedure HSP-186, Step 6.2.3, incorporated the requirement for 70 to 100 revolutions after the introduction of all ingredients, including water, are in the drum at the batch plant at the mixing speed designated by the truck manufacturer. Several batch tickets were reviewed from the concrete trucks. The typical number of revolutions for the concrete being delivered was around 150 to 220 revolutions.

Documents Reviewed: (a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8

Category: Concrete Mixing & Delivery **Topic:** Addition of Job Site Water

Reference: ASTM C 94, Section 12.7

Requirement: When a truck mixer or agitator is approved for mixing or delivery of concrete, no water from the truck water system or elsewhere shall be added after the initial introduction of mixing water for the batch, except when on arrival at the job site the slump of the concrete is less than specified. When adding water, the drum or blades shall be turned an additional 30 revolutions or more, if necessary, at mixing speed until the uniformity of the concrete is within these limits.

Finding: Water was added to only two of the 72 trucks used during the pour for the first section of the concrete pad. Each time water was added the mixing drum was turned at least 30 revolutions. Holtec Procedure HSP-186, Step 6.3.3, allowed water to be added at the job site after initial mixing if directed by the Holtec Representative. Holtec Procedure HSP-186, Step 6.3.3.3, required a minimum of 30 revolutions of the mixing drum if water was added.

Documents Reviewed: (a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8

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Category:	Concrete Mixing & Delivery **Topic:** Conveying
Reference:	ACI 349, Section 5.9.1
Requirement:	Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent separation or loss of materials.
Finding:	The conveyance of concrete during the placement of the ISFSI pad was performed in a method that prevented separation and loss of material. Concrete was discharged from the concrete trucks via chute, then conveyed 20 to 60 yards via conveyor belts (depending on the position of the conveyor in relation to the point of placement), then dropped via "elephant trunk" into place. Positioning of the conveyors and final drop was manipulated by an operator on the ground adjacent to the proximity of placement. No separation or loss of material during placement was observed.
Documents Reviewed:	None

Category:	Concrete Mixing & Delivery **Topic:** Drum Rotation Discharge Limits
Reference:	ASTM C 94, Section 12.7
Requirement:	Discharge of the concrete shall be completed within 1 1/2 hours or before the drum has made 300 revolutions, whichever comes first, after the introduction of mixing water into the cement and aggregates or the introduction of the cement to the aggregates. These limitations are permitted to be waived by the purchaser if the concrete is of such slump after the 1 1/2-hour time or 300-revolution limit has been reached that it can be placed, without the addition of water, to the batch.
Finding:	Three trucks exceeded the 1 1/2-hour time limit. Two of those trucks were rejected and sent back, the other (which exceeded the time requirement by 22 minutes) was accepted by a Holtec Representative since the concrete passed all sampling requirements. Concrete deliveries were checked for the number of revolutions prior to arriving on-site, plus any additional revolutions completed prior to discharge. None of the trucks exceeded the 300-revolution limit. Holtec Procedure HSP-186, Step 6.3.4, directed the Holtec Supervisor to confirm the concrete was meeting the 300 revolutions and 1 1/2-hour time limit. Step 6.3.5 allowed the Holtec Representative to waive the limits by checking the batch to confirm the concrete still complied with temperature, slump, and wet unit weight requirements.
Documents Reviewed:	(a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8

Category:	Concrete Mixing & Delivery **Topic:** Ready Mixed Concrete
Reference:	ACI 349, Section 5.8.2
Requirement:	Ready-mixed concrete shall be mixed and delivered in accordance with the requirements of "Specification for Ready-Mixed Concrete" ASTM C 94 or "Specification for Concrete Made by Volumetric Batching and Continuous Mixing" ASTM C 685.
Finding:	The concrete used for the Comanche Peak pad was mixed and delivered in accordance with ASTM C 94. The licensee's quality assurance group had inspected the batch plant and mixing trucks prior to the pad pour. Holtec Procedure HSP-186, Step 6.1.5, required that the batch plant be inspected prior to the pour and shall meet the requirements of

ASTM C 94. Procedure HSP-186, Step 6.1.6, required that all truck mixers and agitator units be inspected prior to concrete placement to the requirements of ASTM C 94. Additionally, Design Specification 03300, Step 2.3 E required that the delivery of concrete shall be in accordance with ASTM C 94.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0; (b) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8

Category: Concrete Placement **Topic:** Deposition to Avoid Segregation

Reference: ACI 349, Section 5.10.1

Requirement: Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing.

Finding: The concrete was deposited as nearly as practical into its final position, thus avoiding segregation due to rehandling or flowing. Concrete was discharged from the concrete trucks via chute, then conveyed 20 to 60 yards via conveyor belts (depending on the position of the conveyor in relation to the point of pour), then dropped via "elephant trunk" into place. Positioning of the conveyors and final drop was manipulated by an operator on the ground adjacent to the proximity of placement, ensuring good deposit volumes and eliminating any need to "drag" concrete with vibrators.

Documents Reviewed: None

Category: Concrete Placement **Topic:** Foreign Material in Concrete

Reference: ACI 349, Section 5.10.3

Requirement: Concrete that has partially hardened or been contaminated by foreign materials shall not be deposited in the structure.

Finding: On January 4, 2011, NRC inspectors observed the placement of concrete for the first of three sections of the pad. During the concrete pad pour, no observations were made of an attempt to place concrete that had already hardened or contained foreign material. Discussions with the construction managers confirmed that any concrete that had partially hardened or contained foreign material was not acceptable for use.

Documents Reviewed: None

Category: Concrete Placement **Topic:** Formwork

Reference: ACI 349, Section 6.1.2

Requirement: Forms shall be substantial and sufficiently tight to prevent leakage of mortar.

Finding: Visual inspection of the form area on December 27, 2010, January 3, 2011, and January 4, 2011, verified that the forms were of substantial convention to prevent leakage of mortar. During the concrete pour on January 4, 2011, visual inspection validated that forms were sufficiently tight to prevent leakage of mortar.

Documents Reviewed: None

Category:	Concrete Placement **Topic:** Formwork Coating
Reference:	ACI 349, Section 5.7.1 (c)
Requirement:	Preparation before concrete placement shall include that forms be properly coated.
Finding:	A form release agent and/or the use of waxed forms was verified to have been in place prior to concrete placement. The use of the release agent and/or waxed forms provided easy form removal once the concrete had set. Design Specification 03100 Section 3.4 required personnel to apply a form release agent to the formwork in accordance with the form release agent manufacturer's written recommendations.
Documents Reviewed:	(a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C03100-0 "ISFSI Project Specification Concrete Formwork," Rev. 0

Category:	Concrete Placement **Topic:** Laitance Removal/Cold Joint
Reference:	ACI 349, Section 5.7.1 (g)
Requirement:	Preparation before concrete placement shall include that all laitance and other unsound material be removed before additional concrete is placed against hardened concrete.
Finding:	All laitance and unsound material was properly removed before additional concrete was placed against hardened concrete. The pad at Comanche Peak was poured in three sections. This requirement applied to only the second and third sections, which were joined to the other sections. The licensee followed Step 3.2 D of Design Specification 3300, requiring previous concrete work to be bush hammered and cleaned to present a suitable surface to cast new concrete against it. Once the concrete was cleaned, a bonding agent, Flex Con, was applied to the surface prior to casting the next section of concrete. The bonding agent was applied per manufacturer's recommendations as required by Step 3.2.E. of Design Specification 3300.
Documents Reviewed:	(a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-in-place Concrete," Rev. 0

Category:	Concrete Placement **Topic:** Masonry Units
Reference:	ACI 349, Section 5.7.1 (d)
Requirement:	Preparation before concrete placement shall include that masonry filler units that will be in contact with concrete be well drenched.
Finding:	Before the concrete placement on January 4, 2011, the contractor was observed to be wetting the rebar and subgrade, including the masonry blocks used to support the horizontal reinforcement bars off the ground, with a garden-type hose. Visual observation also confirmed that no standing water remained on the subgrade before concrete placement. Holtec Procedure HSP-186, Step 6.1.11, required personnel to wet the engineered fill and exposed concrete surfaces prior to the pour in accordance with the site-specific construction specifications. Design Specification 03300, Step 3.3 I, required personnel to moisten the subgrade prior to placing concrete. The licensee elected to use masonry blocks in accordance with Design Specification 03200 Section 3.5 B to securely support the pad's rebar above the required distance from the ground.

Documents Reviewed:	(a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8; (b) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03100-0 "ISFSI Project Specification Concrete Formwork," Rev. 0; (c) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0

Category:	Concrete Placement **Topic:** Placement Rate
Reference:	ACI 349, Section 5.10.2
Requirement:	Concreting shall be carried on at such a rate that concrete is at all times plastic and flows readily into spaces between reinforcement.
Finding:	Concrete placement was observed to be completed in prompt succession and visually verified to be in a plastic state, easily worked by concrete operators and crews, and that it readily flowed into open spaces between the reinforcement bars.
Documents Reviewed:	None

Category:	Concrete Placement **Topic:** Reinforcement Cleanliness
Reference:	ACI 349, Section 5.7.1 (e)
Requirement:	Preparation before concrete placement shall include that reinforcement be thoroughly clean of ice or other deleterious coatings.
Finding:	Visual verification was made that the reinforcement was free of any ice, dirt, loose rust, or other contaminants. Visual inspection of the pour area within the forms was conducted on three occasions: the afternoon of December 27, 2010, the afternoon of January 3, 2011, and the morning of the actual pad pour, January 4, 2011.
Documents Reviewed:	None

Category:	Concrete Placement **Topic:** Reinforcement Conditions
Reference:	ACI 349, Section 7.4.1
Requirement:	At the time concrete is placed, reinforcement shall be free from mud, oil, or other nonmetallic coatings that decrease bond.
Finding:	Visual verification was made that the reinforcement was free of any mud, oil, grease, and other nonmetallic coatings. Visual inspection of the pour area within the forms was conducted on three occasions: the afternoon of December 27, 2010, the afternoon of January 3, 2011, and the morning of the actual pad pour, January 4, 2011.
Documents Reviewed:	None

Category:	Concrete Placement **Topic:** Removal of Debris
Reference:	ACI 349, Section 5.7.1 (b)
Requirement:	Preparation before concrete placement shall include that all debris and ice be removed from spaces to be occupied by concrete.
Finding:	Visual verification was made that all debris had been removed from the pour area, as

well as confirmation that no ice was present on the forms or rebar. Visual inspection of the pour area within the forms was conducted on three occasions: the afternoon of December 27, 2010, the afternoon of January 3, 2011, and the morning of the actual pad pour January 4, 2011.

Documents Reviewed: None

Category: Concrete Placement **Topic:** Retempered Concrete

Reference: ACI 349, Section 5.10.4

Requirement: Retempered concrete or concrete that has been remixed after the initial set shall not be used unless approved by the engineer.

Finding: On January 4, 2011, during the observation of the concrete pour for the first section of pad, no observations were made of an attempt to place retempered or remixed concrete.

Documents Reviewed: None

Category: Concrete Placement **Topic:** Standing Water Removal

Reference: ACI 349, Section 5.7.1 (f)

Requirement: Preparation before concrete placement shall include that water be removed from the place of deposit before concrete is placed.

Finding: Visual inspection of the pour area within the forms conducted on the morning of the actual pad pour of the first section of the pad, January 4, 2011, verified the absence of any standing water.

Documents Reviewed: None

Category: Concrete Quality **Topic:** Admixtures

Reference: ACI 349, Section 3.6.5

Requirement: Water-reducing admixtures, retarding admixtures, and accelerating admixtures shall conform to ASTM C 494, "Specification for Chemical Admixtures for Concrete."

Finding: The accelerating admixture and water reducing admixture were verified by the inspector as conforming to ASTM C 494. The licensee had elected to use an accelerating admixture, Chryso EnviroMix i40 and a water reducing admixture, Chryso Fluid Optima 256.

Documents Reviewed: (a) Chryso Enviro Mix i40 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010 (b) Chryso Fluid Optima 256 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010

Category: Concrete Quality **Topic:** Aggregates Specifications

Reference: ACI 349, Section 3.3.1

Requirement: Concrete aggregates shall conform to ASTM C 33, "Specification for Concrete Aggregates," or utilized by exception when shown by special test or actual service to produce concrete of adequate strength and durability and approved by the building

official.

Finding: The aggregates utilized by the licensee did not fully conform to ASTM C 33. The only aggregates in the vicinity of Comanche Peak had a history of higher alkali levels. The licensee utilized the exemption option allowed in the ACI 349 requirements. The use of the procured aggregate was authorized by an engineer from both Holtec and Shaw. The use of Type "F" fly ash was added to the design mix to address the potential issue of alkali-silica reactivity. The aggregate that was used was from TxDOT approved sources.

Documents Reviewed: (a) Engineering Design Change Request EDCR-1937-FDA04-012, dated November 22, 2010

Category: Concrete Quality **Topic:** Air Content

Reference: ACI 349, Section 4.2.1

Requirement: Normal weight concrete exposed to freezing and thawing shall be air-entrained with air content indicated in Table 4.2.1. Tolerance on air content as delivered shall be +/- 1.5 percent. For specified compressive strength greater than 5000 psi, reduction of air content indicated in Table 4.2.1 by 1.0 % may be permitted.

Finding: The licensee's air content specification of 5% with use of 3/4" aggregate was in compliance with Table 4.2.1 of ACI 349. Air content sampling during the pad pour was verified to have been within +/- 1.5 percent (3.5 - 6.5%) of the design requirement of 5% air-entrainment. Inspectors verified that this requirement was met on all 14 truck samples that were witnessed by the inspectors. The data sample results ranged from 4.0 to 5.8% air content. Originally the air-entrainment design requirement was 5 - 8% and was specified in Design Specification 03300, Step 2.3, A. 2. The licensee changed the requirement to 3.5 - 6.5% through Engineer Design Change Request (EDCR) 1937-FDA04-021.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0, "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0; (b) EDCR 1937-FDA04-021, dated December 22, 2010

Category: Concrete Quality **Topic:** Air-Entraining Admixture

Reference: ACI 349, Section 3.6.4

Requirement: Air-entraining admixtures shall conform to ASTM C 260, "Specification for Air-entraining Admixtures for Concrete."

Finding: The air-entraining admixture used in the ISFSI pad's concrete mix conformed to ASTM C 260. The licensee chose to use Chryso Air 260, an air-entraining admixture, which was verified by the inspector as conforming to ASTM C 260.

Documents Reviewed: (a) Chryso Air 260 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010

Category: Concrete Quality **Topic:** Cement Specification & Mill Test Report

Reference: ACI 349, Section 3.2.1, 3.2.3

Requirement: Cement shall conform to ASTM C 150, "Specification for Portland Cement." Every

shipment of cement shall be accompanied by a certified mill test report stating the results of tests representing the cement in the shipment and the ASTM specification limits for each item of required chemical, physical, and optional characteristics. No cement shall be used in any structural concrete prior to receipt of the 7-day mill test strengths.

Finding: The cement used for construction of the ISFSI pad met the requirements of ASTM C150 cement. The TXI Midlothian Cement Mill Test Report, dated September 13, 2010, was reviewed and verified to meet the chemical and physical requirements of ASTM C150.

Documents Reviewed: (a) TXI Midlothian Cement Report, dated September 13, 2010

Category: Concrete Quality **Topic:** Clean Water Requirements

Reference: ACI 349, Section 3.4.1

Requirement: Water used in mixing concrete shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or reinforcement.

Finding: The water used in the mixing of the concrete met the requirements. ACI 349, Section 5.8.2, required ready-mix concrete be mixed and delivered in accordance with the requirements of ASTM C 94, "Specification for Ready-Mix Concrete." Ingram provided documentation that stated their water met the requirements of ASTM C-94 (2009), Section 5.13.1, "The mixing water shall be clear and apparently clean. If it contains quantities of substances which discolor it or make it smell or taste unusual or objectionable or cause suspicion, it shall not be used unless service records of concrete made with it or other information indicates that it is not injurious to the quality of the concrete." The batch plant had been in place since 1987 with the same water source. Since that time, concrete with this batch water has been supplied to residential, commercial, TxDOT, and other Comanche Peak Power Plant projects without incident or issues.

Documents Reviewed: (a) Ingram Enterprises Letter, "ASTM C-94 and Mixing Water at Plant Glen Rose," dated December 7, 2010

Category: Concrete Quality **Topic:** Control of Purchased Material for Batch Plant

Reference: 10 CFR 72.154

Requirement: The licensee shall establish measures to ensure that purchased material, equipment, and services conform to procurement documents.

Finding: The licensee performed audits to ensure that purchased material, equipment, and services conformed to procurement documents. Selective audits pertaining to the batch plant trucks, batch plant equipment, batch plant materials, and concrete test lab services were reviewed by the NRC inspectors to confirm that audits were being conducted. No significant issues were identified.

Documents Reviewed: (a) Concrete Test Lab Surveillance Checklist, dated December 17, 2010; (b) Concrete Batch Plant Surveillance Checklist, dated November 18, 2010

Category:	Concrete Quality **Topic:** Corrosion Protection
Reference:	ACI 349, Section 4.4.1
Requirement:	For corrosion protection of reinforcement in concrete, maximum water soluble chloride ion concentrations in hardened concrete at ages from 28 to 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed the limits of Table 4.4.1 of ACI 349 of 0.15 percent by weight of cement. The testing shall conform to ASTM C 1218.
Finding:	A sample of the concrete mix design was tested to have a maximum chloride ion concentration of 0.0018% by weight of cement, which is far below the ACI limit of 0.15%. The lab results were documented in Ana-Lab Corp Results, Project # 512400 dated December 20, 2010.
Documents Reviewed:	(a) Ana-Lab Corp Results, Project # 512400 dated December 20, 2010.

Category:	Concrete Quality **Topic:** Fly Ash
Reference:	ACI 349, Section 3.6.6
Requirement:	Fly ash or other pozzolans used as admixtures shall conform to ASTM C 618, "Specification for Fly Ash and Raw or Calcined Natural Pozzolans for Use in Portland Cement Concrete."
Finding:	The fly ash used in the concrete of the ISFSI pad met the requirements of ASTM C-618. The licensee elected to use Type "F" fly ash in the concrete mix of the ISFSI pad. The HeadWater's Report of Class "F" Fly Ash, dated October 1, 2010, was reviewed and the fly ash was verified to meet the requirements of ASTM C-618.
Documents Reviewed:	(a) HeadWater Resources Report of Class "F" Fly Ash, dated October 1, 2010

Category:	Concrete Quality **Topic:** Infrared Spectrum Trace
Reference:	ACI 349, Section 3.6.10.2
Requirement:	An infrared spectrum trace of the conformance test sample of air-entraining and water-reducing admixtures shall be furnished with the conformance test results.
Finding:	An infrared spectrum trace for the air entraining admixture, Chryso Air 260, the water reducing admixture, Chryso Fluid Optima 256, and the accelerating admixture, Chryso Enviro Mix i40, were furnished to the inspectors for review.
Documents Reviewed:	(a) Chryso Enviro Mix i40 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010; (b) Chryso Fluid Optima 256 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010; (c) Chryso Air 260 Technical Data Sheet from website www.chryso.com viewed on January 27, 2010

Category:	Concrete Quality **Topic:** Water/Cement Ratio
Reference:	ACI 349, Section 4.2.2, Table 4.2.2
Requirement:	Concrete that will be subject to the exposures given in Table 4.2.2 of ACI 349 shall

conform to the corresponding maximum water-cementitious materials ratios and minimum strength requirements of that table. The water/cementitious materials ratio shall be calculated using the weight of cement plus the weight of fly ash or other pozzolans.

Finding: The concrete utilized for the ISFSI pad at Comanche Peak conformed to Table 4.2.2 of the ACI 349 requirements. The Design Specification 03300, Step 2.3. A. 2, required a concrete mix that had a minimum compressive strength of 4,000 psi at 28 days and a water to cement ratio not to exceed 0.50. These values were consistent with ACI 349-01 Table 4.2.2 for concrete in the exposure condition "Concrete intended to have low permeability when exposed to water." The purchase order to the batch plant, Mix ID:2-151TX5EM, contained a water to cement ratio of 0.44. During the pour, the inspector verified a sample of the concrete batch tickets that stated the truck's water to cement ratio. The batch tickets reviewed by the inspector all had water to cement ratios less than 0.50 percent.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0 "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0; (b) Concrete Mix Design MIX-ID:2-151TX5EM, dated October 29, 2010

Category: Concrete Reinforcement **Topic:** Field Bending of Bars

Reference: ACI 349, Section 7.3.2

Requirement: Reinforcement partially embedded in concrete shall not be field bent, except as shown on the design drawings or permitted by the engineer.

Finding: During the concrete pad pour, January 4, 2011, no observations were made of an attempt to bend partially embedded reinforcement.

Documents Reviewed: None

Category: Concrete Reinforcement **Topic:** Mechanical/Welded Connections

Reference: ACI 349, Section 12.14.3

Requirement: If mechanical or welded splices are used, a minimum of six static tensile strength tests shall be conducted as part of the mechanical connection qualification. All of the test samples shall develop in tension or compression, as required, at least 125% of specified yield strength of the bar.

Finding: No mechanical or welded splices were used with the rebar for the Comanche Peak pad.

Documents Reviewed: (a) CMC Rebar North Texas Job #1025002293, Drawing R4; (b) CMC Steel Texas Certified Mill Test Reports for Heat Nos. 3020048, 3020224, 3020172, 3020202, 3020245, 3020633, 3019257, 3019853, 4005284 and 3019766; (c) CMC Rebar North Texas Bid No. J10210, dated July 19, 2010; (d) Holtec Construction Drawing 13769701-04000-C-CON-500-2, "ISFSI Storage Pad," Rev. 0

Category: Concrete Reinforcement **Topic:** Reinforcement Cover for Rebar Exposed to Earth

Reference: ACI 349, Section 7.7.1(a)

Requirement: For concrete cast against and permanently exposed to earth, a minimum concrete cover

of 3 inches shall be provided for reinforcement.

Finding: The majority of the rebar placement in the ISFSI pad met the 3-inch criteria. However, one small section did not fully meet the 3-inch requirement for the cover between the outside edge of the concrete that was exposed to the ground and the reinforcing bars of the pad. Construction Drawing 13769701-04000-C-CON-500-2, Note 11, stated that clearance cover for rebar shall be 2 inches minimum at the top and 3 inches minimum on all other faces. Documented in EDCR-1937-FDA04-029, there was a 1-foot by 8-foot area of the pad where the bottom rebar cover measured only 2.5 inches. The rest of the pad was greater than 3 inches. In percentage terms, the non-conforming area (8 sq. ft.) represents only 0.031% of the total ISFSI pad area. This is less than 0.04% of the total ISFSI pad area and was deemed acceptable for two reasons. One: The bottom surface of the reinforced concrete ISFSI pad was casted against a 3-foot layer of compacted engineered fill (which was a crushed stone material). This subgrade mitigates the risk of corrosion to the steel reinforcement since the crushed stone material allows the ground water to drain away from the ISFSI pad much more effectively than a compacted soil foundation. Two: The engineered fill layer has a low electrical conductivity and is non-acidic which further reduces the risk of corrosion. The 1 foot x 8 foot discrepant area posed a negligible risk to the structural integrity and functional capability of the ISFSI pad; therefore, it was deemed acceptable by Holtec and Comanche Peak.

Documents Reviewed: (a) Holtec Construction Drawing 13769701-04000-C-CON-500-2 "ISFSI Storage Pad," Rev. 0; (b) EDCR-1937-FDA04-029, dated February 17, 2011

Category: Concrete Reinforcement **Topic:** Reinforcement Cover for Rebar on Top

Reference: ACI 349, Section 7.7.1 (b)

Requirement: For concrete permanently exposed to earth or weather (top), a minimum concrete cover of 2 inches shall be provided for number 6 through 18 reinforcement.

Finding: The concrete on the top of the ISFSI pad had at least 2 inches of cover between the outside edge of the concrete and the reinforcing bars of the pad. Construction Drawing 13769701-04000-C-CON-500-2, Note 11, stated that clearance cover for rebar shall be 2 inches minimum at the top and 3 inches minimum on all other faces.

Documents Reviewed: (a) Holtec Construction Drawing 13769701-04000-C-CON-500-2; "ISFSI Storage Pad," Rev. 0

Category: Concrete Reinforcement **Topic:** Reinforcement Tensile Tests

Reference: ACI 349, Section 3.5.3.1.1

Requirement: A minimum of one tensile test shall be required for each 50 tons of each bar size produced from each heat of steel.

Finding: Tensile tests, for the rebar used in the ISFSI pad, were performed as required. Approximately 705 tons of rebar was purchased from CMC Rebar of North Texas. Approximately 315 tons of rebar was used in the construction of the ISFSI pad. The ISFSI pad contained 18 different batches of rebar, with each batch of rebar having an assigned heat number. Twenty-six Certified Mill Test Reports were reviewed, one for each batch plus additional test reports for the larger batches. For the rebar used, an adequate number of tests were performed and all tests confirmed that the rebar met the

design requirements of greater than 60 ksi.

Documents Reviewed: (a) CMC Steel Texas Certified Mill Test Reports for Heat Nos. 3019004, 3019091, 3019710, 3019711, 3020174, 3020214, 3020222, 3020224, 3020225, 3020234, 3020236, 3020238, 3020239, 3020240, 3020241, 3020242, 3020244, 3020245; (b) CMC Rebar North Texas Bid No. J10210, dated July 19, 2010

Category: Concrete Reinforcement **Topic:** Steel Reinforcement Requirements

Reference: ACI 349, Section 3.5.1, 3.5.3.1

Requirement: Reinforcement shall be deformed reinforcement, except that plain reinforcement may be used for spirals or tendons. Deformed reinforcing bars shall conform to ASTM A615, "Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement."

Finding: Deformed reinforcement conforming to ASTM A615 was used in the Comanche Peak ISFSI pad. Comanche Peak Project Specification No. 13769701.04-S-C-03200-0, Section 2.1.A, specified ASTM A615 Grade 60 billet for the reinforcing steel. CMC Steel Texas certified mill test reports documented that the steel purchased for the ISFSI pad was ASTM A615-09b Grade 420/60.

Documents Reviewed: (a) CMC Rebar North Texas Job #1025002293, Drawing R4; (b) CMC Steel Texas Certified Mill Test Reports for Heat Nos. 3019004, 3019091, 3019710, 3019711, 3020174, 3020214, 3020222, 3020224, 3020225, 3020234, 3020236, 3020238, 3020239, 3020240, 3020241, 3020242, 3020244, 3020245; (c) CMC Rebar North Texas Bid No. J10210, dated July 19, 2010

Category: Concrete Testing **Topic:** Field Technician Requirements

Reference: ASTM C 31, Section 6.3

Requirement: The field technicians making and curing specimens for acceptance testing shall be certified ACI Field Testing Technicians, Grade I or equivalent. Equivalent personnel certification programs shall include both written and performance examinations, as outlined in ACI CP-1.

Finding: The field technicians performing the sampling of the concrete for the ISFSI pad were all currently certified as ACI Concrete Field Testing Technician - Grade I. The five individuals' qualifications were reviewed and verified to be current.

Documents Reviewed: (a) American Concrete Institute Certifications "ACI Concrete Field Testing Technician - Grade I," dated November 18, 2006, October 11, 2008, May 3, 2008, December 20, 2008, May 3, 2008, and March 22, 2008

Category: Concrete Testing **Topic:** Initial (Temporary) Sample Storage

Reference: ASTM C 31, Section 10.1.1, 10.1.2

Requirement: If the test specimens cannot be molded at the place where they will receive curing, immediately after finishing, move the specimens to an initial curing place for storage. Lift and support the cylinders from the bottom of the molds. Immediately after molding and finishing, the specimens shall be stored for a period up to 48 hours in a temperature range from 60 to 80 degrees F and an environment that will prevent moisture loss.

Record the temperature using a maximum-minimum thermometer.

Finding: This requirement was not initially met. Holtec Procedure HSP-186, Step 6.4.3, required that the test cylinders shall be initially cured in curing boxes under conditions that maintain the temperature immediately adjacent to the specimens in the range of 60 to 80 degrees F and prevent loss of moisture from the specimens. The first set of samples taken was not maintained at the correct temperature for approximately 2.5 hours. The licensee was unable to set up heating units in the storage box where the samples were stored until about 10 a.m. on the day of the pour. The heated box was correctly set up and running by the time the second set of strength samples were procured. The rest of the concrete samples obtained during the pour were placed into the storage box where the temperature was monitored to have been in the range of 60 to 80 degrees F. The storage box protected the samples from wind and other environmental conditions in order to protect the samples from moisture loss. Field Nonconformance Report FNCR 1937-FDA04-F-004 was written to address the first set of samples not being maintained at 60 to 80 degrees F immediately. The disposition was to use as is. The result of the average 28-day strength test for the first set of samples was 4,730 psi. This was representative of the other sets of samples taken, ranging from 4,140 to 4,800 psi.

Documents Reviewed: (a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8; (b) Rone Engineering Report Number 384858, "Report of Concrete Compressive Strength Test," dated February 1, 2011

Category: Concrete Testing **Topic:** Making & Curing Strength Test Specimens

Reference: ACI 349, Section 5.6.2.2

Requirement: Cylinders for strength tests shall be molded and laboratory-cured in accordance with "Practice for Making and Curing Concrete Test Specimens in the Field" (ASTM C 31).

Finding: The Testing Services Project Specification, Steps 3.3.C.2 and C.5, "Concrete Testing," required the taking and storage of samples of concrete to follow ASTM C31, "Practice for Making and Curing Concrete Test Specimens in the Field" and ASTM C172, "Standard Method for Sampling Fresh Concrete." Holtec Procedure HSP-186, Step 6.4.1.4, required the concrete cylinders to be prepared and cured in accordance with ASTM C31/C31M. Concrete cylinders were to be transported to the laboratory for testing in accordance with ASTM C31, per Step 3.3.C.2 of the Testing Services Project Specification. The 2010 versions of ASTM C31/C31M and ASTM C172 were used. Concrete samples taken during the pouring of the first portion (1/3) of the pad were from the point of placement at the end of the conveyer belt. The samples were collected by Rone Engineering personnel who were ACI Concrete Field Testing Certified Technicians - Grade 1 as specified by ASTM C31/C31M, Section 6.3. Samples were also being taken at the truck point-of-discharge by the concrete supplier (Ingram) to compare with the samples from the point- of-placement. The slump, air content, and temperature readings at the two sampling points compared favorably and were relatively consistent, with air content varying only slightly on several samples. The field technicians taking the samples were very familiar with the sampling techniques. The samples collected by Rone Engineering for the strength tests were placed in molds and stored in a box near the pad that was heated to 60 to 80 degrees F. The samples were moved the following day to the testing lab in Dallas, TX, where they were stored until the 7-day and 28-day strength tests were performed.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-O-01410-1, "Testing Services," Rev. 1; (b) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8

Category: Concrete Testing **Topic:** Slump Tolerances

Reference: ASTM C 94, Section 7.1.2

Requirement: When the project specifications for slump are not written as a "maximum" or "not to exceed" requirement, the following tolerances shall apply: if the slump is 2 inches or less the slump tolerance is +/-0.5 inches. If the slump specified is more than 2 inches to 4 inches, the slump tolerance is +/- 1 inches. If the slump specified is more than 4 inches, the slump tolerance is +/- 1.5 inches.

Finding: Slump sampling during the pad pour was verified to have been within 2 to 4 inches, as required, during placement of the concrete pad. The slump design requirement of 2 to 4 inches was specified in Design Specification 03300, Step 2.3. A. 2. The inspectors verified this for the sampling of 14 different trucks. Only two trucks were found to be outside of the design requirement (4.25 and 4.5 inches) during the pour of the concrete pad. The construction manager approved the use of these trucks. The licensee followed Holtec Procedure HSP-186, Step 6.5.2.1, which stated, "If test results (slump, temperature, density, or air entrainment) of a truck do not meet the specification requirements, the following trucks shall be tested until two consecutive trucks are tested satisfactory." For each occurrence the next two trucks were tested and met the slump limits.

Documents Reviewed: (a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-03300-0 "ISFSI Project Specification Cast-In-Place Concrete," Rev. 0; (b) Holtec Procedure HSP-186 "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 8

Category: Concrete Testing **Topic:** Strength Test Minimum Samples

Reference: ACI 349, Section 5.6.1.1

Requirement: Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day nor less than once for each 150 cubic yd of concrete, nor less than once for each 5000 square ft of surface area for slabs or walls.

Finding: The required number of strength test samples were taken during the pouring of the first section of the ISFSI pad on January 4, 2011. Holtec Procedure HSP-186, Step 6.4.1.1, established a sampling frequency of three (3) samples for the first 300 cubic yards, with one sample taken from the first batch and the other two samples at random. For each additional 100 cubic yards of concrete placement, one additional sample shall be taken. The first pour (of the planned three pours) for the ISFSI pad was expected to take 73 truck loads of concrete at 10 cubic yards per truck for a total of approximately 730 cubic yards. For this quantity, seven sets of samples would be expected. For each set, six test specimens were taken for strength testing plus two spares per Procedure HSP-186, Step 6.4.1.2. Slump, air content, density and temperature were checked during each sampling

per Step 6.4.1.3. During the pouring of the first section of the ISFSI pad on January 4, 2011, seven concrete samples were collected.

Documents Reviewed: (a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8; (b) ISFSI Project Specification No. 13769701.04-S-O-01410-1, "Testing Services," approved October 25, 2010

Category: Concrete Testing **Topic:** Strength Test Sample Locations

Reference: ASTM C 172, Section 5.2.3

Requirement: The concrete shall be sampled by collecting two or more portions taken at regularly spaced intervals during discharge of the middle portion of the batch. Do not obtain samples until after all the water and any admixtures have been added to the mixer. Also do not obtain samples from the very first or last portions of the batch discharge.

Finding: Observation of sampling activities confirmed that, when strength test samples were collected, they were taken from the middle of the batch at the point of placement at the end of the conveyer. Holtec Procedure HSP-186, Section 6.4, provided guidance for concrete sampling and testing. The requirement to take the samples from the middle of the batch was not included in Procedure HSP-186. The requirement to take the samples from the point of placement was in a note to Step 6.3.5 of Holtec Procedure HSP-186. During the concrete pour, the NRC inspector observed several sampling and testing activities of the concrete and confirmed that the samples were being collected consistent with the ASTM C 172 requirement.

Documents Reviewed: (a) Holtec Procedure HSP-186 "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8

Category: Concrete Testing **Topic:** Strength Test Sampling Time Limit

Reference: ASTM C 172, Section 4.1, 4.1.2

Requirement: The elapsed time shall not exceed 15 minutes between obtaining the first and final portions of the composite sample. Start tests for slump, temperature, and air content within 5 minutes after obtaining the final portion of the composite sample. Start molding specimens for strength tests within 15 minutes after fabricating the composite sample.

Finding: Observation of sampling activities confirmed that sampling was being performed within the required time frames. Composite samples were obtained within the 15-minute time requirement. Testing was started within the 5-minute time requirement and molding of the specimens for strength testing was started within the 15-minute time requirement. Holtec Procedure HSP-186, Step 6.4.1, specified that concrete sampling and testing is done in accordance with ASTM C172. The time requirements are specified in Section 4 of the ASTM C 172 standard. However, Holtec Procedure HSP-186 did not specifically state the time requirements. During the concrete pour, the NRC inspectors observed several sampling and testing activities of the concrete and confirmed that the various time criterias were met.

Documents Reviewed: (a) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for (ITS) "B" Applications," Rev. 8

Category:	Concrete Testing **Topic:** Transport of Samples to Testing Lab
Reference:	ASTM C 31, Section 11.1
Requirement:	Concrete strength specimens shall not be transported until at least 8 hours after the final set. The transport time shall not exceed 4 hours. During transport, the specimen is to be protected with suitable cushioning material to prevent damage from jarring. During cold weather, prevent the sample from freezing with suitable insulation material. Prevent moisture loss by wrapping the specimen in wet burlap, by surrounding it with wet sand or using tight fitting plastic caps on plastic molds.
Finding:	The lab samples were transported to the lab after 8 hours, and the transportation process took less than 4 hours. The lab samples were picked up by Rone Engineering approximately 30 hours after the first sample was molded and 19 hours after the last sample was molded. The total transportation time took approximately one hour. The Testing Service Project Specification 01410, Step 3.3.C.2, required the concrete test samples to be placed in a cylinder curing box as soon as practical, and no sooner than 16 hours and not more than 24 hours after casting, the cylinders shall be transported to the laboratory for controlled curing in accordance with ASTM C 31. Rone Engineering exceeded the 24-hour limit. Holtec issued FNCR-1937-FDA04-002 to document exceeding the Testing Service Project Specification 01410 time limit for picking up the samples for transportation. The FNCR identified that, even though the testing lab did not meet their time limits, they did meet the Holtec time limits in Procedure HSP-186, Step 6.4.4, that required the lab to pick up the samples by 24 hrs +/- 8 hours after molding. The lab also met ASTM C31 Step 10.1.2, criteria of retrieving the samples before 48 hours. Holtec then issued EDCR-1937-FDA04-031 to change the design specification to match Holtec Procedure HSP-186.
Documents Reviewed:	(a) Comanche Peak ISFSI Project Specification No. 13769701.04-S-O-01410-1, "Testing Services," dated October 25, 2010; (b) Rone Engineering Report No. 384318, "Report of Cylinder Collection," dated January 6, 2011; (c) Holtec Procedure HSP-186, "Aggregate and Ready Mixed Concrete Testing Requirements for ITS "B" Applications," Rev. 7; (d) Field Nonconformance Report FNCR-1937-FDA04-002, dated January 26, 2011; (e) Engineering Design Change Request EDCR -1937-FDA04-031, dated January 26, 2011

Category:	Corrective Action Program **Topic:** Condition Reports
Reference:	10 CFR 72.172
Requirement:	Measures shall be established to ensure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions identified as adverse to quality, the measures must ensure that the cause of the condition is determined and corrective action is taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken must be documented and reported to appropriate levels of management.
Finding:	Conditions adverse to quality, nonconforming conditions, failures, malfunctions,

deficiencies, deviations, defects, adverse trends, lessons learned at other facilities, and work enhancements were examples of issues identified in Comanche Peak Procedure STA-422 for generating condition reports. For significant conditions adverse to quality, a root cause analysis was required. "Significant conditions adverse to quality" were classified as Level A condition reports. No Level A condition reports had been issued for the ISFSI pad activities. Conditions determined to be "adverse to quality" were categorized as Level B and were divided into two groups as "Upper Tier" or "Lower Tier." Upper tier Level B condition reports required an apparent cause analysis, whereas an apparent cause analysis was optional for lower tier Level B condition reports. Level C was identified as a condition with minimal impact on quality or safety and Level D was a nonconforming condition with no adverse effect on quality. Attachment 8A, "Determination of the Condition Level," of Procedure STA-422 provided criteria and examples for determining the correct level (A, B, C, or D) for classifying an issue or problem.

A listing of 54 condition reports was provided to the NRC inspectors related to the ISFSI project. Not all of the condition reports related to the pad activities. The condition reports addressed a range of issues with several related to lessons learned at other sites loading ISFSIs and relevant NRC information notices that would relate to the Comanche Peak ISFSI. A general review of the topical areas included in the condition reports indicated the licensee was effectively documenting, tracking, and fixing issues related to the ISFSI project. Several condition reports related to pad design and construction activities were reviewed in more detail. Condition Report CR-2010-007872 related to the pouring of the cask construction pad and issues that had occurred during its construction. The cask construction pad was not-important-safety and will be used during the construction of the concrete storage casks. Comanche Peak used the cask construction pad as a practice pour to prepare for the pouring of the ISFSI pad. Problems occurred with air content, high slump values, amount of plasticizer used, minimum drum rotations, and using too much water in the initial "front" end of the batch, which caused the concrete that initially came out of the truck to have too high of a slump, resulting in spilling of the concrete. The lessons learned during the pouring of the cask construction pad were incorporated into the work activities for the ISFSI pad and were good training for the work crews, testing technicians, and concrete supplier. In Condition Report CR-2010-008210, Comanche Peak addressed an issue that had been identified by the NRC during an inspection at the LaSalle Nuclear Plant. The issue related to the use of data from NUREG/CR-6865 in the design of their site-specific ISFSI pad. In the past, the NRC has viewed this NUREG as being of general applicability useful for NRC licensing reviews as opposed to use in pad designs. The NRC conducted a review of the use of NUREG/CR-6865 by Holtec for the LaSalle pad design. On January 20, 2010, E. Benner, NRC Licensing Branch Chief, Division of Spent Fuel Storage and Transportation, sent a memo to C. A. Lipa, Branch Chief, Region III discussing the use of the NUREG for pad design and identified several conditions which, if met, may allow the use of the NUREG as a design tool to predict the maximum sliding and rocking response of a cask on an ISFSI pad (see page 8). Condition Report CR-2010-008210 had been issued by Comanche Peak to ensure the NRC conditions for use were appropriately applied to the Comanche Peak ISFSI pad, which also used information from NUREG/CR-6865 as part of the pad design.

In Condition Report CR-2010-008211, the license discovered during the review of Holtec document HI-2094472, Rev. 0, that the seismic acceleration curves used for the ISFSI pad design were based on Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants," instead of the Newmark, Blume and Kapur spectra from the Comanche Peak FSAR, Chapter 3.7B.1.1. Though the Regulatory Guide 1.60 spectra was similar to the Newmark, Blume and Kapur spectra, they were not identical. Revision 4 of HI-2094472, which was in effect at the time of this NRC inspection, continued to assume a Regulatory Guide 1.60 spectra, but had increased the values by 50%. As such, the Newmark, Blume and Kapur spectra was fully bounded.

In addition to the condition reporting system, Holtec used two other processes to capture issues. These were the field non-conformance report (FCNR) process controlled under Holtec Procedure HSP-35, "Procedure for Nonconformance Reports and Procedure Filed Change Notices for all Site Work," Rev. 1, and the EDCR process controlled under Holtec Procedure HPP-1937-2, "Processing Engineering Design Change Requests (EDCRs) at Comanche Peak," Rev. 0. Shaw Stone & Webster used Procedure PP 5-11, "Field Initiated Engineering Design Change Request Control," for processing EDCRs applicable to their work. These two processes tracked field changes and engineering changes that were identified during construction activities. During the pouring of the first 1/3 of the ISFSI pad on January 4, 2011, the NRC observed the use of the FNCR and EDCR process. FNCR 1937-FDA04-F-004 was issued to identify that the initial strength test concrete specimens collected had been left in ambient temperatures of approximately 40 degrees F for approximately 2 to 3 hours prior to being placed in a heated enclosure and maintained at 60 to 80 degrees F as required by ASTM C31 (2010), Section 10.1.2. Disposition was to use-as-is. Results from the 7-day break tests conducted by Rone Engineering produced strength test results for the affected set of concrete sample consistent with those of the other samples collected during the day, indicating that the short time in ambient temperature had not adversely effected the samples. FNCR 1937-FDA04-F-005 was issued to identify that the craft person operating the vibrator during the pad pour was not consistent with his techniques of vibrating the concrete while it was being placed. Disposition was to inspect the pad for voids when the forms were removed and to address the acceptability of the pad based on the findings of the inspection. EDCR-1937-FDA04-030 identified a discrepancy between the pad specifications and a Holtec procedure related to the minimum rebar temperature that was acceptable during the concrete pour. The specification referenced 40 degrees F but the procedure referenced 35 degrees F as a minimum acceptable temperature for the rebar prior to concrete placement. The EDCR requested the specification be changed to 35 degrees F to be consistent with the procedure and with the American Concrete Institutes (ACI) Standard 306R-08, Section 4.1, "Temperature of Surfaces in Contact with Fresh Concrete," which used the 35 degrees F value.

Documents Reviewed: (a) Comanche Peak Procedure STA-422, "Processing Condition Reports," Rev. 24; (b) Condition Report CR-2010-007872, "Problems Identified During Concrete Pour for Cask Construction Pad," dated August 19, 2010; (c) Condition Report CR-2010-008210, "Problems Identified During an NRC Inspection at the LaSalle Nuclear Station Related to NUREG/CR-6865," dated August 26, 2010; (d) Condition Report CR-2010-008211, "Vendor Report HI-2094472," Rev. 0, Used the Regulatory Guide 1.60 Design Spectra Curve Instead of the Newmark, Blume and Kapur Spectra Discussed in Comanche Peak

FSAR Chapter 3.7B.1.1," dated August 27, 2010; (e) Field Non-Conformance Report (FNCR) 1937-FDA04-F-004, "Concrete Strength Samples Not Immediately Placed in Heated Enclosure after Collection," dated January 5, 2011; (f) Field Non-Conformance Report (FNCR) 1937-FDA04-F-005, "Inconsistent Use of Concrete Vibrator," dated January 5, 2011; (g) Engineering Design Change Request EDCR-1937-FDA04-030 "Minimum Temperature of Surfaces Prior to Concrete Pour," dated January 3, 2011; (h) Internal NRC Memo from E. Benner to C. A. Lipa entitled "Revision to Response to RIII Technical Assistance Request - LaSalle Station ISFSI Pad -Seismic Design LaSalle Station RIII TAR dated 10/20/10," dated January 20, 2010 (ML100200515); (i) Holtec Report HI-2094472, "Dynamic Analysis of Comanche Peak ISFSI Pad," Rev. 4

Category: Heavy Haul Path **Topic:** Heavy Haul Path Analysis

Reference:

Requirement: The heavy haul path shall be designed and constructed to facilitate the total weight of the canister and transporter. Underground utilities, piping, cables, etc., shall be identified and evaluated to ensure no adverse impact during transport of the casks.

Finding: The haul road from the Comanche Peak fuel building to the ISFSI pad was adequately designed and constructed to facilitate the weight of the canister and transporter. Geophysical exploration was performed by Tolunay-Wong Engineers, Inc during February 21 through March 11, 2010, to identify the presence of underground utilities and other anomalies under the proposed new haul road and the ISFSI pad area. Three different technologies were used to locate underground utilities and interferences. These included ground penetrating radar, an electromagnetic meter, and a radio-detection transmitter/receiver. The results were reported in Report 13769701-570517-0004. Cables, wires, electrical conduit and water lines were identified under the proposed haul road. One class 1E electrical cable was identified which required analysis to determine the effect if a cask was dropped while passing over the cable.

The haul path was approximately 3560 feet in length and was built primarily on weathered limestone bedrock. The straight sections of the haul path were compacted gravel. Eight concrete turning pads were located along the path at areas where the transporter will need to change direction. The turning pads were designed to a 6,000 pounds/square inch (psi) concrete strength. Tolunay-Wong Engineers, Inc. drilled borings within the proposed ISFSI pad area (including the area for future expansion) and along the proposed haul path. The depths ranged from approximately 10 to 25 feet. Data from the test results of the borings were used to verify that the haul road and ISFSI pad were structurally capable of supporting the weight of the casks and hauling equipment.

Documents Reviewed: (a) Tolunay-Wong Engineers, Inc. Report 13769701-570517-0004, "Geophysical Report Test Boring Clearance and Utility Exploration for New Haul Road Alignment and ISFSI Pad Areas Comanche Peak Nuclear Power Plant Near Glen Rose, Texas," Rev. 0; (b) Tolunay-Wong Engineers, Inc. Report 3769701-570521-0001, "Geotechnical Data Report ISFSI Pad Comanche Peak Nuclear Power Plant Glen Rose, Texas," Rev. 0

Category:	Pad Design **Topic:** Concrete Compressive Strength at 28 Days
Reference:	HI-STORM FSAR Table 2.2.9
Requirement:	Concrete compression strength shall be less than or equal to 6,000 psi at 28 days.
Finding:	All 28-day average strength sample sets for the first section of the ISFSI pad were verified to be less than 6,000 psi. Seven sets of strength samples were taken during the pour of the first ISFSI pad's section. The average strength for each set ranged from 4,140 psi to 4,800 psi. The highest single concrete sample was 4,960 psi and the lowest single concrete sample was 3,920 psi.
Documents Reviewed:	(a) Rone Engineering Report 384858, "Report of Concrete Compressive Strength Test," dated February 1, 2011

Category:	Pad Design **Topic:** Design Specifications for Rebar
Reference:	HI-STORM FSAR Table 2.2.9
Requirement:	The reinforcing bars used in the pad shall be 60 ksi yield strength ASTM material.
Finding:	The rebar used in the ISFSI pad was ASTM A615-09b Grade 420/60 and met the 60 ksi yield strength requirement. The design specifications for ASTM rebar material at 60 ksi yield strength was specified in the Holtec FSAR, Table 2.2.9, "Examples of Acceptable ISFSI Pad Design Parameters," for Parameter Set "B." CMC Steel Texas provided certified mill test reports for the rebar supplied to Comanche Peak that documented the rebar as ASTM A615-09b Grade 402/60. All yield strength tests showed values above the 60 ksi requirement.
Documents Reviewed:	(a) CMC Rebar North Texas Job 1025002293, Drawing R4; (b) CMC Steel Texas Certified Mill Test Reports for Heat Nos. 3019004, 3019091, 3019710, 3019711, 3020174, 3020214, 3020222, 3020224, 3020225, 3020234, 3020236, 3020238, 3020239, 3020240, 3020241, 3020242, 3020244, 3020245; (c) CMC Rebar North Texas Bid No. J10210, dated July 19, 2010; (d) Comanche Peak ISFSI Project Specification No. 13769701.04-S-C-032000, "Concrete Reinforcement," dated May 13, 2010

Category:	Pad Design **Topic:** Pad Thickness
Reference:	HI-STORM FSAR Table 2.2.9
Requirement:	Concrete thickness must be less than or equal to 28 inches.
Finding:	The Comanche Peak ISFSI pad was designed to a thickness of 25". The construction of the pad resulted in a pad thickness varying from 24" to 28" documented in EDCR-1937-FDA04-029. The reinforced concrete pad was designed as Not Important to Safety (ITS) as stated in Section 2.0.4.1 of the Holtec FSAR. However, Comanche Peak classified the ISFSI pad as ITS-C, which is consistent with NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Important to Safety." Structures, systems, and components classified as ITS-C are defined in NUREG/CR-6407 as those that would not significantly reduce the packaging effectiveness and would not be likely to create a situation adversely affecting public health and safety during a failure or malfunction. FSAR Table 2.2.9, "Examples of Acceptable ISFSI Pad Design Parameters," provided

the parameters for two pad designs. Comanche Peak selected the Set "B" parameters with a pad thickness of less than or equal to 28". Construction Drawing 13769701-04000-C-CON-500-2 provided the dimensions of the pad showing the thickness as 24". Construction Drawing 13769701-04000-C-CON-500-1, Note 13.B, provided for a tolerance of +2", -0" for the thickness of the pad. The licensee had decided to construct the pad with a 25" thickness. EDCR-1938-FDA04-029 was generated to document the pad's resulting construction, which varied from 24" to 28". The EDCR stated that the pad was acceptable because the pad was not greater that 28" as required by the FSAR. Observations during the pad pouring activities on January 4, 2011, confirmed the pad thickness as not greater than 28".

Documents Reviewed: (a) Holtec Final Safety Analysis Report (FSAR) HI-2022444, Rev. 9; (b) Holtec Construction Drawing 13769701-04000-C-CON-500-1, "ISFSI Storage Pad," Rev. 0; (c) Holtec Construction Drawing 13769701-04000-C-CON-500-2, "ISFSI Storage Pad," Rev. 0; (d) EDCR-1937-FDA04-029 dated February 17, 2011

Category: Pad Design **Topic:** Placement of Rebar

Reference: 10 CFR 72.150

Requirement: Rebar placement shall be in accordance with the design drawings.

Finding: Rebar placement slightly deviated from the design drawings. While performing a 100% verification, Holtec QC identified that the distance between #10 rebar varied with a minimum of 7.5 inches to a maximum of 10.5 inches between bars. Design Drawing #13769701-04000-C-CON-500-2 Note 14(A) required the spacing to be 9 inches, +/- 1 inch between bars. An Engineering Design Change Report (EDCR) # 1937-FDA04-027 was generated to document a resolution. This deviation was deemed acceptable by Holtec Engineers because the calculated safety margin due to the deviation was still maintained well above the allowable limit.

Documents Reviewed: (a) Holtec Construction Drawing #13769701-04000-C-CON-500-2, "ISFSI Storage Pad Sheet 2", dated May 14, 2010 (b) Engineering Design Change Request (EDCR) # 1937-FDA04-027, dated December 29, 2010

Category: Pad Design **Topic:** Seismic Analysis for Static & Dynamic Loads

Reference: 10 CFR 72.212 (b)(2)(i)(B)

Requirement: Cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction and soil liquefaction potential or other soil instability due to vibratory ground motion.

Finding: The ISFSI pad design was reviewed to make an initial determination that the pad was adequately designed to support the static and dynamic loads of the storage casks. This initial review was performed to verify that no significant deficiencies were evident with the design prior to the start of pad construction. The ISFSI pad is approximately 252 feet long, 102 feet wide, and 25 inches thick. The pad was constructed with three separate pad pours, each pour comprising 1/3 of the pad. The pad is sized to hold 84 casks. The structural fill under the pad was approximately 3 feet of engineered fill gravel, placed in 9 inch-thick lifts compacted to 95% of maximum dry density. Grade level of the ISFSI

pad was approximately 830 feet. Grade level of the plant area, approximately 3,000 feet west of the ISFSI, was approximately 809 feet. The Holtec Hi-Storm 100S ventilated storage cask system with metal MPC-32 multi-purpose canisters will be used. Each canister will hold 32 PWR fuel assemblies. The weight of the Hi-Storm 100S Version B(218) cask with a loaded MPC-32 is approximately 360,000 pounds.

Numerous geotechnical evaluations of the ISFSI pad area were performed, including eight borings within the planned footprint of the ISFSI pad from 10 to 25 feet in depth, soil sampling, rock coring, observation well installation, laboratory testing of soil and rock samples, surface seismic velocity surveys, electrical resistivity surveys, and surveying of "as-built" boring locations. The subsurface under the ISFSI pad was underlain by a nominal thickness of relatively stiff clay, which provided a stiff foundation support component unlikely to create significant amplification during an earthquake. Very stiff to hard clay stone interblended with weathered limestone and sandstone was found in the first 6 feet. The next 6 feet was interblended limestone. The layer below this was primarily gray limestone locally imbedded with layers of clay stone. This extended to a thickness in excess of 200 feet. The top 12 feet under the ISFSI pad was found to be unsaturated and was expected to exhibit negligible primary consolidation settlement. The material was not expected to saturate when exposed to the load from the fully populated ISFSI pad. The majority of settlement of these materials was expected to be elastic in nature. These soils were cohesive in nature with fines contents greater than 30% and the fines classified as clay based on the Unified Soils Classification System. Therefore, these soils were not considered susceptible to liquefaction and no further analysis was required. Post-earthquake settlement of the ISFSI pad is expected to be negligible.

Shaw Nuclear performed calculations to determine the stability of the ISFSI pad during a seismic event in Calculation 13769701-G-0003. The minimum acceptable factor of safety for the pad was selected as three for loads normally acting on the pad and two for the worst case loading conditions. The factor of safety against bearing capacity failure was calculated as the ultimate bearing capacity divided by the actual bearing pressure. Dead and earthquake loads were considered. The fully loaded (84 casks) factor of safety was calculated to be 7.22. The unbalanced factor of safety was calculated to be 8.18. Because these values were larger than the minimum required factor of safety for both dynamic loads (factor of safety of 2) and static loads (factor of safety of 3), the ISFSI pad was determined to be stable with respect to bearing capacity for these loads.

According to the Comanche Peak FSAR, Section 2.5.2.1, "Seismicity," central and east Texas lie within the zone of least seismic activity in the U.S. The reactor plant seismic design safe shutdown earthquake (SSE), as discussed in FSAR Section 2.5.1, "Basic Geology and Seismic Information," and Section 3.7B.1, "Seismic Input," was based on a peak horizontal ground acceleration of 0.12g and a peak vertical ground acceleration of 0.08g. The free-field horizontal response spectrum assumed at Comanche Peak was a Newman, Blume and Kapur spectrum. Holtec performed a dynamic analysis of the Comanche Peak ISFSI pad in Report HI-2094472 to determine the maximum displacement of a HI-Storm cask, the maximum angle of rotation from the vertical, and the peak vertical load applied to the ISFSI pad when subject to the bounding Comanche Peak seismic response spectra. A comparison of the Comanche Peak seismic spectrum

from FSAR Figure 3.7B-6, "Horizontal Response Spectra, Safe Shutdown Earthquake, 15% Damping," to the Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants," free field horizontal spectrum found a close comparison between the two spectrum. The Regulatory Guide 1.60 seismic spectrum was used in NUREG/CR-6865, "Parametric Evaluation of Seismic Behavior of Freestanding Spent Fuel Dry Cask Storage Systems." For added conservatism, the Holtec analysis used the Regulatory Guide 1.60 shape and increased the horizontal and vertical ground components by 50% over the entire frequency range of the Regulatory Guide 1.60 seismic spectra. This resulted in a horizontal ground component of 0.18g and a vertical ground component of 0.12g used in the ISFSI pad calculations and fully encompassed the Newman, Blume and Kapur spectrum assumed for the Comanche Peak site. The Holtec analysis used the nomograms from NUREG/CR-6865 at the 95% confidence level. A coefficient of friction value of 0.53 was used in the calculations and an engineered fill, Young's Modulus of Elasticity of 12 ksi. Actual plate load tests reported November 22, 2010, using Holtec Procedure HPP-1937-103 determined the Young's Modulus of Elasticity to be 12,446 psi (12.446 ksi) for the engineered fill.

Soil profiles at Comanche Peak were cross compared to the profiles in NUREG/CR-6865. Comanche Peak FSAR Table 2.5.4-5, "Initially Selected Values of Preexcavation-Dynamic Foundation Design Parameters," Table 2.5.4-5B, "Representative Geophysical Data from Preexcavation Surveys at Station Location," and Table 2.5.4-5C, "Representative Geophysical Data from Safe Shutdown Impoundment Dam Location," were compared to NUREG/CR-6865, Table 3.5, "Soft Soil Foundation Material Properties," and Table 3.7, "Rock Foundation Material Properties." The soil profile in Table 2.5.4-5C had a shear wave velocity of 650 ft/sec. Using a Poisson's Ratio of 0.43 from the same table and a weight density of 144 lb/cu. ft. from Table 2.5.4-5 resulted in a computed Young's Modulus of 5408 ksf down to 10 feet. This was within the range of the Comanche Peak soft soil foundation (19.3 ksi = 2779 ksf from Table 3.5) and the rock foundation (44.8 ksi = 6451 ksf from Table 3.7). Holtec concluded that the substrate profile at Comanche Peak could be considered within the range of NUREG/CR-6865. Based on the conservative use of the Regulatory Guide 1.60 seismic spectrum increased by 50% and the similarity of the soil profiles, Holtec concluded that the nomograms in NUREG/CR-6865 were applicable to the Comanche Peak site. Calculations determined that the casks would rotate approximately 0.16 degree raising the cask less than 1 inch during an earthquake. If a very low coefficient of friction (0.2) was assumed in the calculations, the most the cask would slide would be approximately 1.1 inches.

Documents Reviewed:

(a) Shaw Nuclear Calculation 13769701-G-0004, "ISFSI Pad Settlement," Rev. 0; (b) Shaw Stone & Webster, Inc. Technical Report 13769701-R-G-00001-2, "ISFSI Pad Geotechnical Report," Rev. 2; (c) Shaw Nuclear Calculation 13769701-G-0003, "ISFSI Pad Stability," Rev. 2; (d) Holtec Report HI-2094472, "Dynamic Analysis of Comanche Peak ISFSI Pad," Rev. 4; (e) Shaw Nuclear Calculation 13769701-G-0002, "ISFSI Pad One-Dimensional Site Response Analysis," Rev. 0; (f) Shaw Nuclear Calculation 13769701-G-0001, "ISFSI Pad Bases of Geotechnical Parameters Recommended for Design," Rev 0; (g) Comanche Peak FSAR, Amendment 102 [ML082321269]; (h) Holtec Procedure HPP-1937-103, "Procedure for Plate Test of the Engineered Fill for Comanche Peak," Rev. 1, and Plate Load Test Results dated Nov. 22, 2010; (i) Holtec

Report HI-2094473, "Structural Analysis of Comanche Peak ISFSI Pad," Rev. 2; (j) Internal NRC Letter from E. Benner to C. A. Lipa, entitled "Revision to Response to RIII Technical Assistance Request (TAR) - LaSalle Station ISFSI Pad Seismic Design, LaSalle Station RIII TAR dated 10/20/09," dated January 20, 2010 (ML100200515)

Category: Pad Design **Topic:** Site Specific Seismic Parameters - Tip Over

Reference: CoC 1014, Technical Specification 3.4.3 (a)

Requirement: The resultant horizontal and vertical site-specific seismic acceleration parameters shall be evaluated to ensure the cask will not tip over or undergo excessive sliding during the design basis earthquake.

Finding: The seismic acceleration parameters for the Comanche Peak ISFSI site were evaluated and found to be incapable of causing a cask to tip over or undergo excessive sliding. The reactor plant seismic design SSE was discussed in FSAR Section 2.5.1, "Basic Geology and Seismic Information," and Section 3.7B.1, "Seismic Input." The FSAR identified a peak horizontal ground acceleration of 0.12g and a peak vertical ground acceleration of 0.08g as the design basis earthquake (SSE) values for the site. Holtec performed a dynamic analysis of the Comanche Peak ISFSI pad in Report HI-2094472 to determine the maximum displacement of a Hi-Storm cask, the maximum angle of rotation from the vertical, and the peak vertical load applied to the ISFSI pad when subject to the bounding Comanche Peak seismic response spectra. The Holtec analysis increased the seismic spectra by 50%, using values of 0.18g horizontal and 0.12g vertical. A coefficient of friction value of 0.53 was used in the calculations and an engineered fill Young's Modulus of 12 ksi. Calculations determined that the casks would rotate approximately 0.16 degree, raising the cask less than 1 inch on its side during an earthquake. If a very low coefficient of friction (0.2) was assumed in the calculations, the most the cask would slide would be approximately 1.1 inches. The ISFSI pad was constructed with a broom finish on the surface and will provide a high coefficient of friction, significantly higher than the 0.2 assumed in the calculations.

Documents Reviewed: (a) Holtec Report HI-2094472, "Dynamic Analysis of Comanche Peak ISFSI Pad," Rev. 4; (b) Comanche Peak FSAR, Amendment 102 [ML082321269]

Category: Pad Design **Topic:** Static Coefficient of Friction

Reference: HI-STORM FSAR Table 2.2.9

Requirement: A static coefficient of friction of 0.53 between the ISFSI pad and the bottom of the overpack shall be used. If a higher value of the coefficient of friction is used, it shall be verified by test. The test shall follow the guidelines in FSAR Section 3.4.7.1.

Finding: A static coefficient of friction of 0.53 was used for the Comanche Peak ISFSI calculations. The FSAR, Table 2.2.9, specified the 0.53 value. Holtec Report HI-2094472, Section 4.0, "Assumptions," specified a value of 0.53 for the coefficient of friction for the Comanche Peak ISFSI pad calculations. The ISFSI pad was constructed with a broom finish on the surface, which should provide a higher coefficient of friction.

Documents Reviewed: (a) Comanche Peak Final Safety Analysis Report (FSAR), Amendment 102 [ML082321269]; (b) Holtec Report HI-2094472, "Dynamic Analysis of Comanche Peak ISFSI Pad," Rev. 4

Category:	Pad Design **Topic:** Subgrade Effective Modulus of Elasticity
Reference:	HI-STORM FSAR Table 2.2.9
Requirement:	Subgrade effective modulus of elasticity shall be less than or equal to 16,000 psi.
Finding:	Comanche Peak used a subgrade effective modulus of elasticity of 12 ksi. Holtec Report HI-2094472, Section 5.0, "Input Data," specified a value of 12 ksi. Holtec Report HI-2094473, Section 5.0, "Input Data," specified the minimum Young's modulus of Engineering Fill as 12,000 psi (12 ksi). Actual tests at the ISFSI pad site to determine the modulus of elasticity were performed using Holtec Procedure HPP-1937-103. Test results dated November 22, 2010, reported an elastic modulus of 12,446 psi (12.446 ksi).
Documents Reviewed:	(a) Holtec Procedure HPP-1937-103, "Procedure for Plate Test of the Engineered Fill for Comanche Peak," Rev. 1, and Plate Load Test Results dated Nov. 22, 2010; (b) Holtec Report HI-2094472, "Dynamic Analysis of Comanche Peak ISFSI Pad," Rev. 4; (c) Holtec Report HI-2094473, "Structural Analysis of Comanche Peak ISFSI Pad," Rev. 2

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