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Cc:	Hill, Craig
Subject:	Three Submittals to the NRC
Date:	Friday, March 18, 2011 2:52:36 PM
Attachments:	TXNB-11015 RAI 133, 136 Supp.pdf TXNB-11016 RAI 146, 167 Supp.pdf TXNB-11018 RAI 020, 204, 205.pdf

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Luminant has submitted the three attached letters to the NRC:

TXNB-11015 supplemental response for RAIs 133 and 136 about maintaining the dose to construction workers < 100 mrem/year

TXNB-11016 supplemental response to RAIs 146 and 167 about installing free-field seismic instrumentation

TXNB-11018 response to RAIs 202, 204, and 205 about seismic response spectra, compliance with ASHRAE Std 15, and the 100-yr return period non-coincident site wet-bulb temperature.

If there are any questions regarding these submittals, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant).

Thanks,

John T. Conly

COLA Project Manager
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SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4207 (CP RAI #133)

SRP SECTION: 12.03-12.04 - Radiation Protection Design Features

QUESTIONS for Health Physics Branch (CHPB)

DATE OF RAI ISSUE: 1/21/2010

QUESTION NO.: 12.03-12.04-9

10 CFR 20.1101, 1301, 1302, NUREG-0800, 'Standard Review Plan,' Section 12.03-12.04

In RAI No. 3318 (RAI # 119), Question 12.03-12.04-8 (13150), the NRC staff asked the Applicant to change the combined license (COL) final safety analysis report (FSAR) to better define the as low as reasonably achievable (ALARA) program for construction workers.

The requirement of 10 CFR 20.1301(a)(1) is "The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1 mSv) in a year," and 10 CFR 20.1101(b) requires exposure to members of the public be as low as reasonably achievable (ALARA). In response to the NRC staff's RAI, the Applicant noted that they would continually monitor construction worker dose during construction, they would take the actions appropriate to maintain exposure ALARA, and they would ensure protection of construction workers to radiation exposure from radiography sources and radioactive materials. However, since the Radiation Protection milestones described in COL FSAR Table 13.4-201 do not require any Radiation Protection program elements until the receipt of radioactive sources under the COL License, the NRC staff is unable to determine who has responsibility for monitoring and controlling cumulative construction worker dose resulting from activities of diverse licensees.

The Applicant is requested to update and revise COL FSAR Section 12.4 to describe how the Applicant will meet the requirements of § 20.1101, 1301 and 1302 to control, limit and monitor exposure to members of the public involved in the construction of CPNPP, Units 3 and 4.

SUPPLEMENTAL INFORMATION:

As a result of a discussion with the NRC Staff on February 14, 2011, FSAR Subsections 12.2.1.1.10 and 12.4.1.9 have been revised to include a statement that Luminant maintains procedures to control, limit, and monitor cumulative dose for construction workers and security employees such that total exposure for each construction worker and security employee is maintained less than 100 mrem per year in accordance with 10 CFR Part 20.1301.

Luminant's procedures will include precautions to keep construction workers and security personnel clear of areas of potential exposure due to various sources that may be on site. Once elements of the Radiation Protection Program are implemented per FSAR 12.5 and Table 13.4-201, this program and its supporting procedures will be used to control and monitor exposure. Prior to the implementation of the CPNPP Units 3 and 4 Radiation Protection Program, the controls in the Offsite Calculation Manual (ODCM) for CPNPP Units 1 and 2 limit the dose in Unrestricted Areas (which includes the construction sites for Units 3 and 4).

Impact on R-COLA

See attached marked-up FSAR Rev 1 pages 12.2-2 and 12.4-1.

Impact on S-COLA

None.

Impact on DCD

None.

The estimated fission and corrosion product activity in the evaporation pond water are shown in the Table 12.2-201. This estimated source term is initial activity into the evaporation pond, based on the realistic source term of the Waste Monitor Tank and the decontamination factors from NUREG-0017. RCOL2_12.02-2

~~Any additional solid, liquid and gaseous radiation sources that are not identified in Subsection 12.2.1, including radiation sources used for instruments calibration or radiography, will be provided when such site-specific information would become available in the procurement phase. These sources will be incorporated in the updated FSAR.~~ Additionally, the site maintains contained sources of known isotope and activity containing byproduct, source, or special nuclear materials for use as calibration, check, or radiography sources. Example uses for these types of sources include systems security checks; equipment standardization and calibration; process control; gauging and quality assurance testing; teaching; and nuclear reactor operations. RCOL2_12.02-1

Licensed sources containing byproduct, source, and special nuclear materials that warrant shielding design consideration meet the applicable requirements of 10 CFR Parts 20, 30, 31, 32, 33, 34, 40, 50, and 70. A supplementary warning symbol is used in the presence of large sources of ionizing radiation consistent with the guidance in Regulatory Issue Summary (RIS) 2007-03. Sources maintained on site are shielded to keep personnel exposure ALARA. Sources brought on-site by contractors for activities such as the servicing or calibration of plant instrumentation or the performance of radiography are maintained and used in accordance with the provisions of the licensed utility group or contractor. If these sources must be maintained on site, designated plant personnel approve the storage location and identify appropriate measures for maintaining security and personnel protection. Luminant maintains procedures to control, limit and monitor cumulative dose for construction workers and security employees such that total exposure for each construction worker and security employee is maintained less than 100 mrem per year in accordance with 10 CFR Part 20.1301. RCOL2_12.03-12.04-9 RCOL2_12.02-1 RCOL2_12.03-12.04-9 S01 RCOL2_12.03-12.04-10 S01

Specific details regarding the isotope, quantity, form and use of these sources are maintained onsite following their procurement. The following minimum information is maintained: RCOL2_12.02-1

- Isotopic concentration
- Location on site
- Source strength, form, and geometry (as applicable)
- Description of the use

Written procedures based upon the Radiation Protection Program govern the procurement, receipt, inventory, labeling, leak testing, surveillance, control, transfer, disposal, storage, issuance, and use of these sources. Additionally, these

12.4 DOSE ASSESSMENT

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

12.4.1.9 Dose to Construction Workers

CP COL 12.4(1) Replace the paragraph in DCD Subsection 12.4.1.9 with the following.

RG 1.206 requires that an annual dose to construction workers be estimated in a new unit construction area for multi-unit plants. This subsection evaluates the potential radiological dose impacts to construction workers at the CPNPP Units 3 and 4 resulting from the operation of CPNPP Units 1 and 2. Because the CPNPP Units 3 and 4 construction period occurs while CPNPP Units 1 and 2 are operating, construction workers at CPNPP Units 3 and 4 would be exposed to direct radiation and gaseous radioactive effluents from CPNPP Units 1 and 2. Doses to CPNPP Unit 4 construction workers from operation of CPNPP Unit 3 are not evaluated because the CPNPP Unit 4 construction will be substantially complete and many of the construction workers gone before CPNPP Unit 3 begins commercial operation. Gaseous effluent releases from CPNPP Unit 3 during fuel loading and low power testing, less than 5 percent power, are not expected to be significant, and are bounded by the conservatisms in the following dose estimate. During CPNPP Unit 3 testing, the overall work force, as well as outdoor construction activities on CPNPP Unit 4, would be reduced.

Additionally, the site maintains contained sources of known isotope and activity containing byproduct, source, or special nuclear materials for use in equipment standardization and calibration, security checks, process control, gauging, quality assurance, teaching, or radiography sources. Luminant maintains procedures to control, limit and monitor cumulative dose for construction workers and security employees such that total exposure for each construction worker and security employee is maintained less than 100 mrem in a year in accordance with 10 CFR Part 20.1301 and the Radiation Protection Program. Once CPNPP Unit 3 completes 5% power ascension testing and proceeds to commercial operation, the remaining construction workers doses will be maintained ALARA in accordance with 10 CFR 20.1301 as described in Section 12.5, Operational Radiation Protection Program. Subsection 13.4 provides an implementation milestones for the Operational Radiation Protection Program that meets the regulations provided in 10 CFR Parts 20.1101 (a) and (b), 1301 and 1302. Once CPNPP Units 3 and 4 become operational, the estimated dose for remaining construction workers will be maintained ALARA at less than 2 mrem/hr. RCOL2_12.03-12.04-9 S01 RCOL2_12.03-12.04-10 S01 RCOL2_12.03-12.04-6

In order to ensure that the B.A. evaporator room does not become a VHRA during the end of cycle, routine surveillance for the B.A. evaporator room during the end of cycle is stipulated in the Radiation Protection Program. In the event that the routine surveillance shows an increase in dose level, an appropriate strategy to sufficiently reduce the dose rate below the criteria for a VHRA is to be provided. DCD_12.02-29 DCD_12.02-30

Add the following information after the last paragraph in the discussion on Calibration in Subsection 12.5.4.2 of NEI 07-03A. RCOL2_12.05-6

Source Term Reduction Strategy

The plant source term is described by the level of radiation, or radioactive material, given off or contained in plant systems, structures, or components that results in occupational radiation exposure from routine operation of the plant, including anticipated operational occurrences. The source term includes, but is not limited to, activated components in the primary coolant, corrosion and wear products activated in the reactor and distributed in plant systems, or sealed sources maintained to support plant operations. The reduction and control of the plant radiation source term is an essential element of meeting the requirements of 10 CFR 20.1101(b). RCOL2_12.05-6

FSAR Subsection 12.1.1.3.2 commits the administrative programs and procedures to comply with RG 8.8, which provides several strategies for reducing personnel exposure, including some options that would limit the overall source term, such as crud control and equipment isolation and decontamination. Additionally, the following DCD Subsections, which describe design considerations for the reduction of the overall source term, are already incorporated into the FSAR by reference:

- Subsection 12.1.2.1
- Subsection 12.1.2.2.3
- Subsection 12.3.1.1.1.1 Item (E)
- Table 12.3-7

Luminant will identify cobalt and other activated material sources during the detailed design phase of the project. During plant operation, Luminant will utilize industry practice guidance similar to EPRI report TR-103296 to ensure that procurement of components or piping, conducting maintenance, or modifications considers the identified sources of cobalt and other activated materials. RCOL2_12.05-6 S01

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SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4294 (CP RAI #146)

SRP SECTION: 03.07.04 – Seismic Instrumentation

QUESTIONS for Geosciences and Geotechnical Engineering Branch 1 (RGS1)

DATE OF RAI ISSUE: 2/26/2010

QUESTION NO.: 03.07.04-2

Paragraph IV(a)4 of Appendix S of 10 CFR 50 requires that, "Suitable instrumentation must be provided so that the seismic response of nuclear power plant features important to safety can be evaluated promptly after an earthquake." Regulatory Guide (RG) 1.166 provides the guidance regarding the instrumentation and procedures to make the required evaluation.

In FSAR subsection 3.7.4.1, "Comparison with Regulatory Guide 1.12" you proposed to use foundation-level instrumentation for operating basis earthquake (OBE) determinations. The FSAR states that "it is acceptable to perform a CAV check of seismic responses measured at the R/B and PS/B foundation locations". RG 1.166 explicitly states that "The evaluation to determine whether the OBE was exceeded should be performed using data obtained from the three components of the free-field ground motion (i.e., two horizontal and one vertical)". Also, Appendix A to RG 1.166, which provides interim OBE exceedance guidelines in the case that the installed seismic instrumentation or data processing equipment is inoperable, states that "For plants at which instrumentally determined data are available only from an instrument installed on a foundation, the cumulative absolute velocity (CAV) check (see Regulatory Position 4.2 of this guide) is not applicable." Considering that the CAV value of 0.16g-sec was defined using free-field instruments, the staff is not clear based on the justification provided in the FSAR and is concerned that the plant may not be shutdown in all instances when RG 1.166 anticipated a shutdown would be performed. Please provide further clarification why foundation instrument records are appropriate for CAV checks for CPNPP's OBE determinations.

SUPPLEMENTAL INFORMATION:

In the previous response to this RAI (ML100950107), Luminant provided clarification that foundation instrument records are appropriate for CAV checks for OBE determinations. In response to a teleconference on January 27, 2011, Luminant has decided to provide free-field instrumentation at grade in the plant yard in addition to the in-plant seismic instrumentation. The FSAR has been revised accordingly.

Impact on R-COLA

See attached marked-up FSAR Revision 1 pages 3.7-12, 3.7-13, and 3.7-14.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

The seismic category I fuel oil storage tanks are metal tanks which are enclosed by tornado missile protecting concrete vaults (that is, the seismic category I PSFSVs). Since the PSFSVs are below-grade structures, the fuel oil storage tanks are not above-ground tanks. However, the tanks and their mountings are seismically analyzed consistent with the discussion of hydrodynamic loads for above-ground tanks given further below. The tanks' seismic analysis is based on the ISRS which are derived from site-specific SSI analysis of the PSFSVs as documented in Appendix 3MM, using the corresponding site-specific FIRS. Flexibility of the tank shell and tank shell damping effects are considered in estimating the fundamental frequency and spectral accelerations of the tank including its impulsive fluid weight.

3.7.4.1 Comparison with Regulatory Guide 1.12

CP COL 3.7(16) Replace the second paragraph in DCD Subsection 3.7.4.1 with the following. RCOL2_03.07.04-2 S01

The criteria that define the vibratory motion that requires the shutdown of the plant are based on the site-specific OBE. The 5% damping FIRS associated with the site-specific OBE are enveloped by 1/3 of the 5% damping CSDRS. OBE motion is measured at plant grade with seismic instrumentation located in the free field. Spectra scaled from the 5% damping site-specific SSE response spectra are used directly for OBE exceedance checks. An OBE exceedance check is performed in accordance with Section 4 of RG 1.166 (Reference 3.7-41) using both a response spectrum check and a cumulative absolute velocity (CAV) check. The comparison evaluation is to be performed within 4 hours of the earthquake using data obtained from the three components of the earthquake motion as defined by the three orthogonal axes of the standard plant (two horizontal and one vertical) on the uncorrected earthquake records. The evaluation is also to include a check on the operability of the seismic instrumentation as mandated by Section 4.3 of RG 1.166 (Reference 3.7-41).

CP COL 3.7(16) Replace the third paragraph, except the first sentence, in DCD Subsection 3.7.4.1 with the following.

For the free-field instrumentation located in the plant yard, the OBE acceleration and velocity spectra for 5% critical damping are scaled directly from the corresponding SSE spectra. Using site-specific values of OBE input motion, acceleration and velocity spectra for 5% critical damping are also developed for the seismic instrumentation located at the two foundation basemat locations in the R/B and east PS/B. Following the guidance of RG 1.12 and RG 1.166, the basemat instrumentation locations are used for shutdown consideration only in the event that the free-field instrumentation is inoperable. The other three RCOL2_03.07.04-2 S01

instrument locations in the plant superstructure described in Section 3.7.4.2 serve as data sources for long-term evaluation for start-up and as back-up data sources in the unlikely event that both the free-field and the foundation instruments are inoperable during an earthquake, as these instrument locations are not required by RG 1.12 to be used for shutdown determination. RCOL2_03.07.04-2 S01

~~Using these site-specific values of OBE ground input motion, in-structure acceleration and velocity response spectra are developed for the two Unit 3 seismic instrumentation foundation basemat locations in the R/B and east PS/B for 5 percent critical damping. The other three instrument locations described in Subsection 3.7.4.2 serve as back-up data sources in the unlikely event that the foundation instruments are inoperable during an earthquake, and the upper level instrument locations are also not required by RG 1.12 (Reference 3.7-40) to be used for shutdown determination.~~

~~For CPNPP Units 3 and 4, it is considered acceptable to utilize the foundation-level seismic instrumentation to perform the cumulative absolute velocity (CAV) exceedance check for the following reasons:~~

- ~~The minimum required site-specific ground motion input response spectra (which are the CSDRS anchored at 0.1 g) are greater than the calculated site-specific free-field ground motion, and are also greater than the nominal site-specific ground motion input response spectra calculated for the R/B and PS/B foundations. This is shown in Figure 3.7-201, where FIRS3 represents the free-field ground motion, and FIRS1 represents the nominal site-specific ground motion input spectra for the R/B and PS/B foundations. In this case, it is acceptable to perform a CAV check of seismic responses measured at the R/B and PS/B foundation locations.~~
- ~~Structure-to-structure interactions, which could potentially influence the measured seismic response levels, will not occur because the R/B and PS/B are both founded on the same very stiff limestone layer and are separated by expansion joints which prevent seismic interaction.~~

CP COL 3.7(16) Replace the sixth paragraph in DCD Subsection 3.7.4.1 with the following.

In the event that the free-field instrumentation is inoperable, or both the free-field and the foundation-level instrumentation are inoperable, then the guidance of RG 1.166 Appendix A is applicable.

3.7.4.2 Location and Description of Instrumentation

CP COL 3.7(16) Replace the sixth bullet of the bulleted list in the second paragraph of DCD Subsection 3.7.4.2 with the following.

- In the vicinity of the power block area at surface grade, on top of backfill material, and sufficiently far away from structures in order to appropriately measure free-field ground motion. RCOL2_03.07.04-2 S01

3.7.4.3 Control Room Operator Notification

CP COL 3.7(14) Replace the third sentence of the paragraph in DCD Subsection 3.7.4.3 with the following.

For CPNPP Units 3 and 4, the anticipated seismic response is essentially the same since both units are founded at the same elevation and on the same subgrade with the same stratigraphies, and have the same backfill conditions (including fill concrete) as previously described in Subsection 3.7.1.3 and ~~Chapter 2~~Subsection 2.5.4. Only Unit 3 will be equipped with seismic monitoring instrumentation; however, the main control room (MCR) for both units will be provided with annunciation upon triggering of the instrumentation. CTS-00922

3.7.4.4 Comparison with Regulatory Guide 1.166 RCOL2_03.07.04-2 S01

CP COL 3.7(16) Replace the second sentence of the first paragraph in DCD Subsection 3.7.4.4 with the following.

As previously discussed in Subsection 3.7.4.1, the seismic instrumentation and OBE exceedance checks meet the requirements of RG 1.166 (Reference 3.7-41). The OBE exceedance checks can be performed using only uncorrected earthquake data for the three orthogonal plant directions (two horizontal and one vertical) obtained from seismic instrumentation installed in the free fields as described in Subsection 3.7.4.2.

3.7.4.6 Program Implementation

CP COL 3.7(19) Replace the paragraph in DCD Subsection 3.7.4.6 with the following.

The seismic instrumentation program for CPNPP Units 3 and 4 will be established at least 12 months prior to first fuel load.

3.7.5 Combined License Information

Replace the content of DCD Subsection 3.7.5 with the following.

SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4542 (CP RAI #167)

SRP SECTION: 03.08.04 - Other Seismic Category I Structures

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

DATE OF RAI ISSUE: 5/21/2010

QUESTION NO.: 03.08.04-64

This Request for Additional Information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR 50.55a, and General Design Criteria (GDC) 1, 2, 4, and 5.

In its response to RAI 2994 (#108), Question 03.08.04-6, Luminant provides answers in the same format as the question. In Part (a) of the response, the Applicant indicates that the Safe Shutdown Earthquake (SSE) is described in the Final Safety Analysis Report (FSAR), Subsection 3.7.1.1. The staff reviewed FSAR Subsection 3.7.1.1 and was unable to find this description of the SSE. The staff, however, did find the SSE response spectra in Figure 3.7.202 of FSAR which is the minimum Certified Seismic Design Response Spectra (CSDRS) anchored at 0.1g. Please clarify whether the SSE is defined at elevation 782 feet, which is the same elevation where the Ground Motion Response Spectra (GMRS) is defined, and describe the manner in which the required seismic monitoring instrumentation will be installed at elevation 782 feet, which elevation is 40 feet below the ground surface.

For Part (b) the Applicant provides the values for the wind speed, the snow load and roof load used in the design. However, for the SSE, the Applicant, again, refers to FSAR Subsection 3.7.1.1, the subsection where the staff was unable to find the description for the SSE. Address this inconsistency and provide a description of the type and location of the seismic monitoring instrumentation that needs to be installed at elevation 782 feet.

Reference: Luminant's response to request for additional information no. 2994; Log # TXNB-09078; dated December 10, 2009; ML093480149.

SUPPLEMENTAL INFORMATION:

The response to Part (b) of the question (ML102240246) stated that the foundation-level in-plant instrumentation used to measure earthquake motion is considered to be measuring free-field motion as explained in a previous response to RAI 146 (ML100950107). Luminant has decided to install free-field instrumentation in the plant yard at grade in addition to the in-plant seismic instrumentation. The FSAR has been revised accordingly.

Impact on R-COLA

See marked-up FSAR Revision 1 pages 3.7-12, 3.7-13, and 3.7-14 attached above.

Impact on DCD

None.

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5317 (CP RAI #205)

SRP SECTION: 03.07.01 - Seismic Design Parameters

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

DATE OF RAI ISSUE: 2/15/2011

QUESTION NO.: 03.07.01-7

This is a follow-up to RAI 3.7.1-3.

In response to RAI 3.7.1-3 Luminant has stated that the development of foundation input response spectra (FIRS) 1, FIRS 2, and FIRS 3 is consistent with the recommendations of NEI (2009) *Consistent Site-Response/Soil-Structure Interaction Analysis and Evaluation* for embedded structures that are analyzed as surface structures. To date, the soil-structure interaction (SSI) analysis performed in support of the US-APWR Standard Plant has treated embedded structures as surface structures. In contrast, in the SSI analysis of the CPNPP structures, embedded structures are analyzed as embedded structures, not surface structures.

Consequently, FIRS 1, FIRS 2, and FIRS 3 that were developed for treating embedded structures as surface structures will not generally be the same FIRS for analyzing embedded structures as embedded structures. Section 3.2.3 of NEI gives a multi-step process for developing FIRS to be used when analyzing embedded structures as embedded structures. Provide justification for using FIRS 1, FIRS 2, and FIRS 3 as the basis of comparison for determining the proper seismic input to the CPNPP structures and describe how the current approach does or does not meet the guidelines of DC/COL Interim Staff Guidance-017 (which adopts the methodology of NEI [2009]).

ANSWER:

The minimum design spectra, tied to the shapes of the certified seismic design response spectra (CSDRS) and anchored at 0.1g, define the safe-shutdown earthquake (SSE) design motion for the site-specific seismic design and analysis of category I structures. GMRS/FIRS1 and FIRS 2 and 3 motions developed in FSAR Subsection 2.5.2 were not used as SSI input for the structural and seismic design and evaluations for CPNPP Units 3 and 4 because they are all below the federally mandated 0.1 g SSE (10 CFR 50 Appendix S). FSAR Figure 3.7-201 shows why the 0.1 g SSE from the CSDRS is used as SSI input motion for the design and analysis in lieu of the spectra developed in FSAR Subsection 2.5.2. FSAR Section 3.7.1.1 defines the SSE and contains summary descriptions of FIRS1, FIRS2, FIRS3 and

FIRS4 shown in Figure 3.7-201. The response to related CP RAI 167 Question 03.08.04-64 (ML102240246) discusses how the site-specific SSE is defined.

The SSI analyses of the seismic category I structures documented in FSAR Chapter 3 and its related appendices consider both surface and embedded conditions, with limited exceptions. One such exception is the analysis of the segments 1 and 3 of the ESWPT, which considers only embedded conditions in the SSI analyses since those tunnel segments are buried.

The development of the SSE ground motion used as the basis for the site-specific SSI analyses of the standard plant is described in FSAR Subsection 3.7.1.1 and Section 3NN.2 of Appendix 3NN. FSAR Appendices 3KK, 3LL, and 3MM for the seismic analyses of site-specific structures utilize the same approach for the development of the SSI ground input motion and cross-reference to the explanations in FSAR Subsection 3.7.1.1 and Section 3NN.2. Please note that the discussion in Section 3NN.2 has been revised to correct a cross-reference to Subsection 2.5.2.

Two statistically independent time histories H1 and H2 are developed compatible to the horizontal 0.1 g CSDRS design basis input spectrum, and a vertical acceleration time history V is developed compatible to the vertical 0.1 g CSDRS design spectrum. These time histories are referred to herein as 0.1 g CSDRS motions.

Analyses of structures as surface structures were performed using 0.1 g CSDRS motions directly as input at the surface level, which is equal to the foundation level for the SASSI analyses.

Analyses of structures as embedded structures were also performed using 0.1 g CSDRS time histories as outcrop motion input at the bottom of foundation level at the top of limestone. The SASSI SSI analysis requires the object motion to be defined as in-layer motion. Therefore, the analyses of embedded foundations use horizontal in-layer motion input time histories that are numerically equivalent to the outcrop motions. These in-layer motions are obtained from a set of site response analyses, separate from those documented in FSAR Subsection 2.5.2, that are performed on a soil column consisting of the rock subgrade and backfill strain-compatible profiles identical to those used in the SSI analyses with no iteration on soil properties. The 0.1 g CSDRS motions are applied to the soil column as outcrop motion at the top of limestone/foundation interface elevation in order to calculate the in-layer motion at the same location. This procedure is the same as used in NEI White Paper Section 3.2.3 Step 3. These site response analyses provide two horizontal acceleration time histories (East-West and North-South) within the top limestone rock layer that are used as input in the SASSI analyses of embedded foundations. A different set of time history motions is developed for each considered soil profile. The 0.1 g CSDRS motions are applied directly to SASSI as in-layer motions for embedded foundations.

Figure 1 shows the horizontal ground motion acceleration response spectra (ARS) calculated in the site response analyses. The figure shows the 0.1 g CSDRS and surface ARS calculated for each of the four soil cases: lower bound (LB), best-estimate (BE), upper bound (UB) and high bound (HB) as indicated. The 0.1 g CDSRS motion was input as outcrop motion at the foundation level at top of limestone. The resulting ground surface ARS are significantly higher than the outcrop motions input at rock level.

ISG-017 and the associated NEI document require the motions applied to exceed the performance-based spectra developed at foundation level (FIRS) and at surface level (PBSRS). The performance based surface response spectra (PBSRS) corresponds to FIRS3 or FIRS4 identified in FSAR Figure 3.7-201. The input motion applied exceeds the FIRS3 and FIRS4 values by a significant margin at all frequencies. None of the spectra in FSAR Figure 3.7-201 directly represent outcrop FIRS response for embedded structures, however based on Figure 1, surface spectra are higher than the foundation level outcrop motion for this soil column. Therefore, the performance-based FIRS will be lower than FIRS3 and FIRS4

motions in FSAR Figure 3.7-201 which are lower than the 0.1 CSDRS used as input motion. Therefore, the motions applied exceed the ISG-017 required FIRS and PBSRS input requirements.

Because the design was developed prior to issuance of ISG-017, the exact procedures used for the SSI analysis may not match verbatim what is described in ISG-017. However, the motions used are conservative relative to the procedure advocated in ISG-017 as follows:

For vertical motions, the 0.1 g CSDRS motions were applied in SASSI as in-layer motion even though these motions represent outcrop motions. This approach is conservative since in-layer motions are lower than outcrop motions for this profile across the range of key frequencies as seen in Figure 2. The vertical motions envelope those required by ISG-017 because vertical motions are developed from the horizontal using a site-specific V/H ratio, which is the same for all motions.

The consequence of SSI analysis approach used is that the design based on the SSI input motion is conservative because the SSI input motion envelopes surface and embedded conditions of the ISG-017 guidelines. Because the design was developed prior to issuance of ISG-017, the exact procedures used for the SSI analysis may not match verbatim what is described in ISG-017. However, despite the differences, the resulting structural and seismic design is as conservative, or more so, than what would be achieved with ISG-017 procedures.

Reference:

NEI White Paper, "Consistent Site-Response/Soil Structure Interaction and Evaluation," NEI, June 12, 2009.

Attachments:

Figure 1 – Site Response Soil Column Analysis Results Showing Ground Surface Acceleration Response Spectra for Four Soil Profiles due to Rock Outcrop Motion Applied at Foundation Level

Figure 2 - Site Response Soil Column Analysis Results Showing Foundation Level in-Layer Acceleration Response Spectra for Four Soil Profiles due to Rock Outcrop Motion Applied at Foundation Level

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 3NN-4.

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

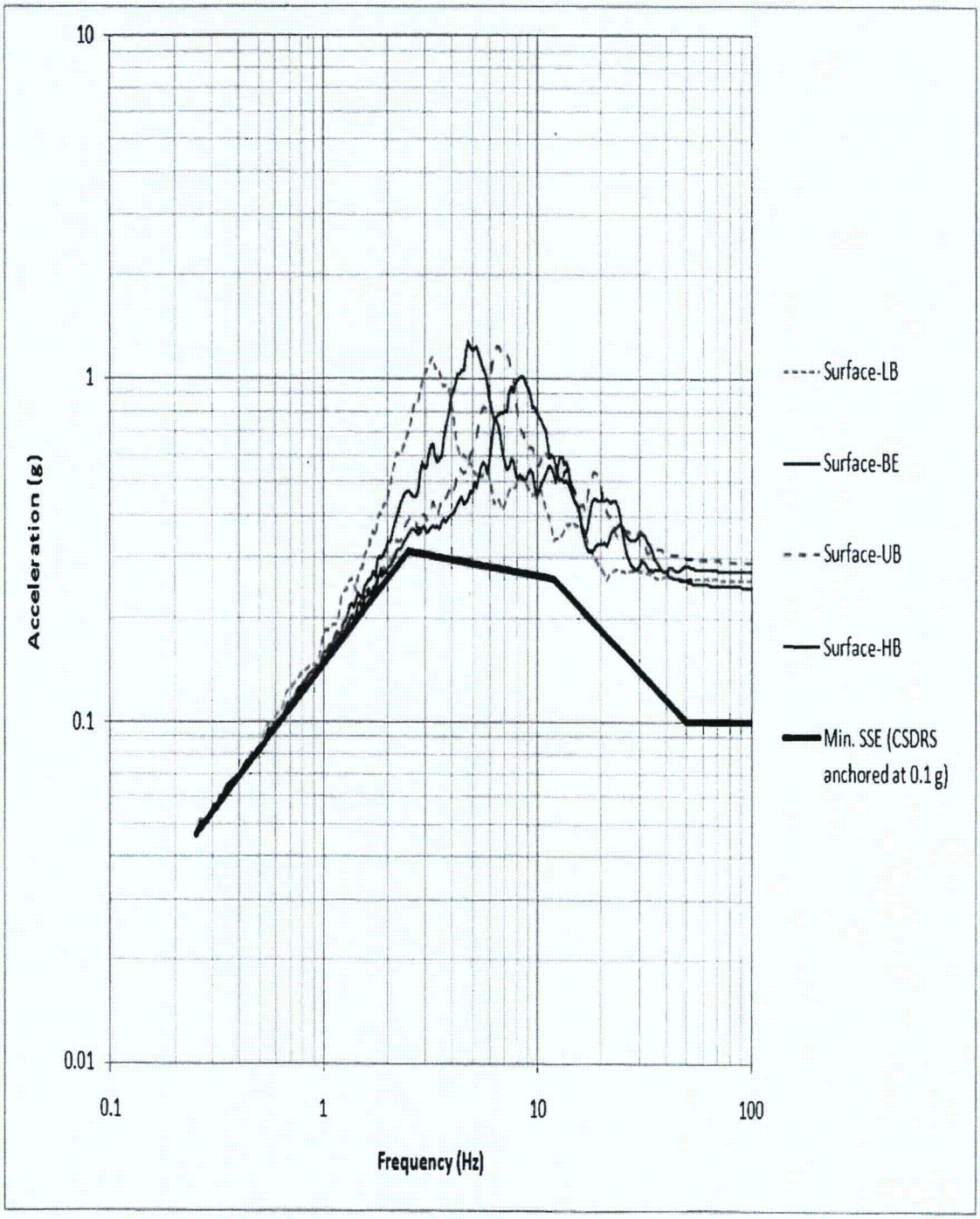

Figure 1 – Site Response Soil Column Analysis Results Showing Ground Surface Acceleration Response Spectra for Four Soil Profiles due to Rock Outcrop Motion Applied at Foundation Level

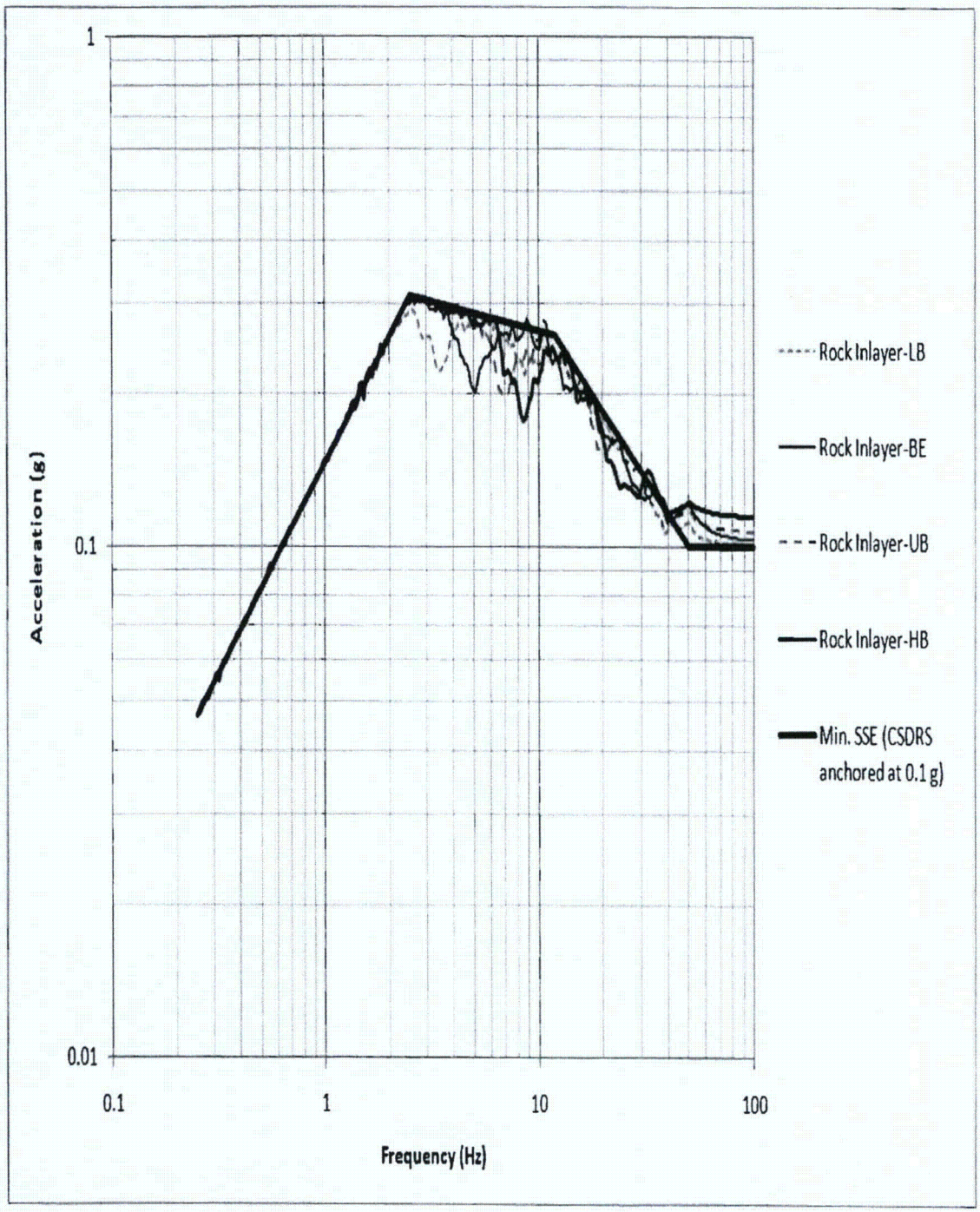

Figure 2 – Site Response Soil Column Analysis Results Showing Foundation Level in-Layer Acceleration Response Spectra for Four Soil Profiles due to Rock Outcrop Motion Applied at Foundation Level

~~that are used as input in the SASSI analyses of embedded foundation. The outcrop horizontal time histories are used as input for the SASSI analyses of surface foundations.~~The outcrop horizontal time histories are used directly as input for the SASSI analyses of surface foundations applied at the FIRS bottom of foundation elevation. The analyses of embedded foundation use "within" motion input time histories that are also applied at the FIRS input elevation. The "within" motions are obtained from a set of site response analyses, separate from these documented in Subsection 2.5.2, that are performed on a soil column consisting of the rock subgrade and the backfill, for purposes of embedded foundation SSI analysis. The design motion is applied to the soil column as layer outcrop motion at the FIRS elevation in order to calculate the within-layer motion. These site response analyses provides for each considered backfill profile, two horizontal acceleration time histories (East-West and North-South) of the design motion within the top limestone rock layer that are used as input in the SASSI analyses of embedded foundations. The time history of the vertical outcrop accelerations serves as input for both surface and embedded foundations. ~~The time step of the acceleration time histories used as input for the SASSI analysis is 0.005 sec.~~ RCOL2_03.08.04-54 RCOL2_03.07.01-7

3NN.3 SASSI Model Description and Analysis Approach

Figure 3NN-7 shows the three-dimensional SASSI FE model used for site-specific seismic analysis of the US-APWR R/B-PCCV-containment internal structure of Units 3 and 4. The SASSI structural model uses lumped-mass-stick models of the PCCV, containment internal structure, and R/B to represent the stiffness and mass inertia properties of the building above the ground elevation. A three-dimensional (3D) FE model, presented in Figure 3NN-8, represents the building basement and the floor slabs at ground elevation.

The model is established with reference to the Cartesian coordinate system with origin established 2 ft.-7 in. below the ground surface elevation at the center of the PCCV foundation. The origin location corresponds to the location of the coordinate system used as reference for the seismic analysis of the standard plant presented in Section 3.7. The orientation of the Z-axis is upward. The orientation of the standard plant model is modified such that the positive X-axis is oriented northward and the Y-axis is oriented westward.

The geometry and the properties of the lumped-mass-stick models representing the above ground portion of the building are identical to those of the lumped mass stick model used for the R/B-PCCV-containment internal structure seismic analysis, as addressed in Appendix 3H. SASSI 3D beam and spring elements with cross sectional properties identical to those of the standard plant models represent stiffness properties. All of the modeling characteristics present in the standard plant lumped mass stick models for the R/B-PCCV-containment internal structure are the same as for the SASSI model, with the exception of minor adjustments for compatibility with SASSI, described as follows. Because SASSI does not have rigid link capability, ~~T~~the rigid links in the lumped mass stick models that connect different nodal points at the same floor elevation are replaced with SASSI 3D beam elements with high stiffness properties. The 3D beam elements RCOL2_03.08.04-57 RCOL2_03.08.04-57

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5411 (CP RAI #202)

SRP SECTION: 06.04 - Control Room Habitability System

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 2/11/2011

QUESTION NO.: 06.04-12

This is a follow-up RAI for USAPWR DCD RAI No. 49 Question No. 06.04-19 and RAI 338-2325, Question No. 06.04-6 (ADAMS Accession Number ML091700682); RAI No. 559-4387; Question No. 06.04-13 (ADAMS Accession Number ML101450224) (NRC ID 4387, Question number 16732), and for Comanche Peak R-COLA RAI No. 3968, Question No. 06.04-7 (ADAMS Accession Number ML100550345), and RAI No. 4678, Question No. 06.04-11 (ADAMS Accession Number ML102810224). Due to the expected plant design impact of the resolution of the issues associated with this RAI, it is being issued simultaneously to both the DCD applicant and the R-COL applicant.

In response to Question No. 06.04-13, **OPEN ITEM** - Follow-up RAI (NRC ID 4387, Question Number 16732), dated May 20, 2010, the COL FSAR was revised in a confusing and potentially ambiguous manner. Specifically, the FSAR commits to design the enclosure and chillers in accordance with ANSI/ASHRAE Standard 15-2007. The NRC staff can accept essential and non-essential chillers located in proximity of other important equipment if they are designed in accordance with a robust consensus standard like ANSI/ASHRAE Standard 15. Unfortunately, compliance with the standard was made ambiguous with the recent revision to the COL FSAR. The specific or detailed design of the chillers has not been finalized and it is not possible at this time to demonstrate compliance with STD 15. It is also not possible to conclude whether a dedicated ventilation for each machinery room is necessary to comply with STD 15. The recent COL FSAR revision has precluded the use of dedicated ventilation and instead indicated that the auxiliary building ventilation would be used. STD 15 clearly requires dedicated ventilation under certain conditions. Specifically, STD 15, Section 8.11.4 reads, "*Air and supply and exhaust ducts to the machinery room shall serve no other area.*"

Please justify why a dedicated ventilation and the other requirements of STD 15 Sections 8.11.and 8.12 are not necessary for compliance with STD 15 for all possible chiller configurations permitted by the FSAR. If additional design commitments for the chillers (size, refrigerant type, refrigerant volume, refrigerant amount ....) are necessary to justify this assertion please include these design commitments in the FSAR.

ANSWER:

The design of the essential chilled water system (ECWS), non-ECWS chillers, and chiller equipment rooms is within the scope of the standard plant contained in the US-APWR Design Control Document (DCD). The applicable sections of the DCD related to ECWS, non-ECWS chillers, and chiller equipment rooms are incorporated by reference into the FSAR.

DCD RAI 691-5410, Question 06.04-14 requested additional information about the design of the ECWS, non-ECWS chillers, and chiller equipment rooms, and compliance with ANSI/ASHRAE Standard 15. MHI responded to RAI 691-5410 in letter UAP-HF-11061 on March 9, 2011. The letter is not yet available in ADAMS.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5465 (CP RAI #204)

SRP SECTION: 02.03.01 - Regional Climatology

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 2/14/2011

QUESTION NO.: 02.03.01-12

10 CFR 52.79(a)(1)(iii) states that the COL FSAR shall include "the seismic, meteorological, hydrologic, and geologic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated." The US-APWR DCD states that the 0% exceedance ambient design temperature site parameters are based on the EPRI Advanced Light Water Reactor Utility Requirements Document and conservative estimates of historical high and low values for potential US-APWR sites. The staff considers temperatures based on a 100-year return period to provide sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated as required by the regulation. This is why SRP 2.3.1 states that 100-year return period ambient temperature and humidity statistics should be identified as site characteristics. Thus, the staff believes the higher of either the maximum recorded dry-bulb value or the maximum 100-year dry-bulb value should be listed as the Comanche Peak Nuclear Power Plant (CPNPP) site characteristic value to be compared to the US-APWR 0% exceedance maximum dry-bulb site parameter value. Similarly, a comparison should be provided between the 100-year non-coincident wet-bulb value and the US-APWR DCD 0% exceedance maximum non-coincident wet-bulb value.

In response to RAI 02.03.01-11, CPNPP COL FSAR Table 2.0-1R was updated to include comparisons between the site characteristic 100-year return period temperatures for the maximum dry bulb temperature with coincident wet bulb temperature as well as the minimum dry bulb temperature. These values, as presented, are acceptable to the staff. However, the updated table did not include a comparison between the site parameter 0% exceedance non-coincident wet bulb temperature and the 100-year return period non-coincident wet bulb temperature.

Please update CPNPP COL FSAR Table 2.0-1R to include a comparison between the 100-year return period non-coincident wet bulb temperature site characteristic value and the US-APWR DCD 0% exceedance maximum non-coincident wet bulb temperature value or provide a statement as to why this information should be omitted.

ANSWER:

The 100-year return period maximum dry bulb temperature and the coincident wet bulb temperature are used to calculate the capacity of safety related HVAC system cooling coils. The safety related HVAC system cooling coil design is based on the enthalpy of the cooling coil inlet and outlet air flow. The cooling coil inlet air enthalpy is determined from the 100-year return period dry bulb temperature and the coincident wet bulb temperature.

The non-coincident wet bulb temperature is generally used in the cooling tower design as the inlet air temperature; however the non-coincident wet bulb temperature is not used in the US-APWR design and is therefore not relevant to safety analyses.

Table 2.0-1R summarizes the typical DCD design conditions and the site conditions and Regulatory Guide 1.206 section C.I.2 states that the purpose of meteorological information in the COLA is to "demonstrate that the applicant has accurately described the site characteristics and appropriately used them in the plant design and operating criteria". The 100-year return period maximum non-coincident wet bulb temperature was not used in the US-APWR design, however the FSAR has been revised to compare the 100-year return maximum non-coincident wet bulb values to the DCD 0% exceedance non-coincident wet bulb values.

The ASHRAE Fundamentals Handbook gives an accepted methodology for calculating 100-year return values for dry bulb temperature. The ASHRAE discussion of the methodology used to calculate an n-year return period Extreme Annual Design Conditions specifically uses dry bulb temperature as the example. The handbook bases the dry bulb temperature return period calculation on the assumption that the annual maxima and minima temperatures are distributed according to the Gumbel Type 1 extreme value distribution. Assuming that the wet bulb temperature follows the same Type 1 Gumbel distribution as the dry bulb temperature results in a site-specific 100-year return non-coincident wet bulb temperature of 86°F (30°C) using 30 years (1977-2006) of meteorological data from the Dallas/Fort Worth Airport. For comparison, the maximum wet bulb temperature was also calculated to be 86°F using a methodology from the Statistical Engineering Division of NIST. This value is equal to the 0% annual exceedance maximum (historical limit excluding peaks <2 hr) non-coincident wet bulb temperature of 86°F given in the US-APWR DCD.

Impact on R-COLA

See attached marked-up FSAR Revision 1 page 2.0-3

Impact on S-COLA

None; this response is site-specific

Impact on DCD

None.

Table 2.0-1R (Sheet 2 of 15)
Key Site Parameters

	Extreme wind speed (other than in tornado)	155 mph for 3-second gusts at 33 ft aboveground level based on 100-year return period, with importance factor of 1.15 for seismic category I/II structures	~~90~~96 mph for-3-second gust wind speed at 33-ft aboveground	RCOL2_0 .03.01-9
CP COL 2.1(1) CP COL 2.2(1) CP COL 2.3(1) CP COL 2.3(2)	Ambient design air temperature ~~(1% exceedance maximum)~~ ~~Ambient design air temperature~~ ~~(0% exceedance maximum)~~	1% exceedance maximum: 100°F dry bulb, 77°F coincident wet bulb, 81°F non-coincident wet bulb	1% exceedance maximum: 99°F dry bulb, 75°F coincident wet bulb, 78°F non-coincident wet bulb	RCOL2_0 .03.01-11
		0% exceedance maximum: 115°F dry bulb, 80°F coincident wet bulb, 86°F non-coincident wet bulb, historical limit excluding peaks <2 hr	0% exceedance maximum: 112°F dry bulb, 78°F coincident wet bulb, 83°F non-coincident wet bulb, historical limit excluding peaks <2 hr 100-year return period maximum: 115°F dry bulb, 78°F coincident wet bulb 86°F non-coincident wet bulb	RCOL2_0 .03.01-11 RCOL2_0 .03.01-6 S01 RCOL2_0 3.01-12 RCOL2_0 .03.01-6 S02
CP COL 2.3(3) CP COL 2.4(1) CP COL 2.5(1)	Ambient design air temperature ~~(1% exceedance minimum)~~ ~~Ambient design air temperature~~ ~~(0% exceedance minimum)~~	1% exceedance minimum: -10°F dry bulb	1% exceedance minimum: 25°F dry bulb	RCOL2_0 .03.01-11
		0% exceedance minimum: -40°F dry bulb, historical limit excluding peaks <2 hr	0% exceedance minimum: -0.5°F dry bulb, historical limit excluding peaks <2 hr 100-year return period minimum: -5°F dry bulb	RCOL2_0 .03.01-6 S01 RCOL2_0 .03.01-6 S02
	Atmospheric dispersion factors (χ/Q values) for on-site locations:			

From:	Virgilio, Martin
To:	Miller, Charles; Grobe, Jack; Holahan, Gary; nucfed@aol.com; Sanfilippo, Nathan
Cc:	Borchardt, Bill; Weber, Michael; Ash, Darren
Subject:	Today"s Kick off Meeting
Date:	Thursday, March 24, 2011 5:34:01 AM
Attachments:	Task Force Kick Off Meeting.docx

All

Attached is a one pager I developed to help guide today's kick off meeting for Task Force being chartered to respond to the Tasking Memo on actions following the events in Japan.

Marty

Task Force Kick Off Meeting

Charter

Near Term Actions

- Establish a group dedicated to communications and coordination with national/international stakeholders
- Identify immediate actions needed
- Identify technical issues requiring additional review and priority (H M L)
- Prepare the 30 day quick look report and Commission Meeting briefing material

Longer Term Actions

Conduct a systematic lessons learned review of the event to refine the list of technical issues

Organize and charter working groups to address one or more technical issues

- SES Leads for each WG who would draw upon technical experts from the line as needed

Estimate resources and impacts on other planned work

Establish a Steering Committee responsible for

- Integration
- Direction and Decision Making;
- Formulation of Policy for Commission Consideration

Technical Issues

SBO duration and coping strategies,
50.54(hh)(2) hardware and strategies, execution of strategies (equipment location, environmental considerations, training),
External and internal flooding,
Combustible gas control
SAMG adequacy and execution of strategies
EP,
Seismic including GSI 199,
Tsunami, Hurricanes, Seismic Events

From: Buckberg, Perry
Sent: Monday, March 21, 2011 5:30 PM
To: Li, Chang; Pieringer, Paul; Chuang, Tze-Jer; Patterson, Malcolm; Roggenbrodt, William; Zhao, Jack; Le, Tuan; Grady, Anne-Marie; Chien, Nan; Jackson, Christopher; Strnisha, James; Scarbrough, Thomas
Subject: AP1000 Final SE Chapter 23 - Concurrence

Resent to include more cognizant staff...

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. **TAC RN1850**

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC. Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg

Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:
http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
  - Chapters for Concurrence – clean
  - Chapters for Concurrence – mark-ups

From: Miller, Eric
Sent: Monday, March 21, 2011 1:09 PM
To: Ashley, Clinton; Jensen, Walton; Jackson, Christopher; Drozd, Andrzej; Peng, Shie-Jeng; McKirgan, John
Subject: FW: Modeling Guidelines for CAP

Re-sending for use in our meeting today.

-Eric

From: Miller, Eric
Sent: Friday, March 18, 2011 12:12 PM
To: McKirgan, John
Cc: Ashley, Clinton; Jensen, Walton; Jackson, Christopher; Drozd, Andrzej; Peng, Shie-Jeng
Subject: Modeling Guidelines for CAP

John,

Attached you will find the revised modeling guidelines for CAP that I put together (the original is included as an Excel spreadsheet attachment in the meeting scheduler for Monday). I would like to send this to MHI to help them understand what we are looking for in this portion of the audit. Walt's comments have been taken into account with this revision. I look forward to discussion about this guide on Monday.

Thanks,
Eric

NPSH Methodology Assumptions used in approved NRC Staff Safety Evaluations

Model Options

Heat Transfer

(b)(5)

Fog and Mist Modeling

(b)(5)

Jet and Drop Breakup Model

(b)(5)

Drop-Liquid Phase Conversion

(b)(5)

Structural Heat Sinks

(b)(5)

Containment Spray

(b)(5)

Heat Exchangers

(b)(5)

Fan Coolers

(b)(5)

Interfacial Area

(b)(5)

Break Flow Flashing

(b)(5)

Mass and Energy Calculations

(b)(5)

Single Failure

(b)(5)

NPSH for non-design basis events assumptions

(b)(5)

From: Grady, Anne-Marie
Sent: Monday, March 21, 2011 4:46 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,
I reviewed my portions of the SE, containment isolation and leak rate testing, in sections 23V and 23W. The changes are style guide changes only. Except for two identical comments I have added to the Evaluation in 23V. Accident temperatures needed to be added to a valve and piping spec, which W revised and I audited. No change was or is needed to the DCD text. We were simply using the confirmatory items to get W to revise the spec. Which they did.
I have attached the SE with my comments located at the 2 sentences which I believe are unnecessary.
Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 10:43 AM
To: Jackson, Christopher; Grady, Anne-Marie
Cc: Wagage, Hanry
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Folks, Please look at your sections of the attached Ch 23 and give me a recommendation for concurrence or give me comments/edits as soon as possible. This is a short turn around. Thanks, John

Hanry, your section is not in yet.

Thanks,

John

From: Buckberg, Perry
Sent: Monday, March 21, 2011 8:39 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John; Segala, John; Lee, Samuel; Jackson, Terry; Shams, Mohamed; Jenkins, Ronaldo; Kowal, Mark
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej; Stubbs, Angelo; Hernandez, Raul; Wheeler, Larry; Zhang, Deanna; Chopra, Om; Patel, Pravin; Le, Hien; Tjader, Theodore; Chapman, Travis
Subject: AP1000 Final SE Chapter 23 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg
Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

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- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
  - Chapters for Concurrence – clean
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From: Carneal, Jason
Sent: Monday, March 21, 2011 2:33 PM
To: ODriscoll, James; Jackson, Christopher
Subject: Reference to RG in Section 6.4 - followup action from Chapter Day.

Chris and Jim:

The one follow-on for SPCV from Friday's Chapter Day was providing the correct RG to reference in the following paragraph:

Type of Pressurization System and CRE Zone

The staff reviewed the U.S. EPR design against NUREG-0800, Acceptance Criterion 3, "Pressurization Systems," and related regulatory guidance.

(b)(5)

Have we determined which RG to reference here? Once we add this, we are done with the SPCV portion of Section 6.4.

Michelle will be giving input on her two actions from the meeting sometime today.

Thanks,

Jason

JASON CARNEAL

PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

From: Grady, Anne-Marie
Sent: Tuesday, March 22, 2011 5:17 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

John,
I reviewed ch 6.2.4, 6.2.5, and 6.2.6 SE, based on revision 17.

I have no comment on 6.2.5, Combustible Gas Control.

(b)(5)

These are my only comments.
Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 3:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris. Anne-Marie,

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff.

Thanks,

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John

From: Carneal, Jason
Sent: Monday, March 21, 2011 5:38 PM
To: Jackson, Christopher
Subject: paragraph - normal operating pressures

(b)(5)

The paragraph with the highlighted range is provided above.

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's **specific comments/questions** 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg
Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

Specific Comments/Questions

(b)(5)

3) (b)(5)

Please confirm the revised statement coveys the authors intent. The proposed edits add the language used in the RAI response.

4)

5) (b)(5)

6)

Please verify this revision conveys the authors intent. CFRA is not defined in the technical specifications or DCD Section 6.4.

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http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDes

ign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
  - Chapters for Concurrence – clean
  - Chapters for Concurrence – mark-ups

From: Flanders, Scott
To: Lutchenkov, Dimitri
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: RE: Dropin
Date: Tuesday, March 22, 2011 12:13:00 PM

Dimitri, I would prefer to wait until next week before we have anymore meetings. The best use of Laura's time is working on the document.

Scott

From: Lutchenkov, Dimitri [mailto:dimitri.lutchenkov@unistarnuclear.com]
Sent: Tuesday, March 22, 2011 10:03 AM
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin

(b)(5)

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 9:56 AM, "Flanders, Scott" <Scott.Flanders@nrc.gov> wrote:

I am not sure this was delivered to you, so I am forwarding it to be sure.

Scott

From: Flanders, Scott
Sent: Tuesday, March 22, 2011 9:53 AM
To: 'dimitri.lutchenkov@unistarnuclear.com'
Cc: Quinn, Laura; Fetter, Allen; Chokshi, Nilesh
Subject: Dropin

(b)(5)

Scott

>>> This e-mail and any attachments are confidential, may contain legal,
professional or other privileged information, and are intended solely for the
addressee. If you are not the intended recipient, do not use the information
in this e-mail in any way, delete this e-mail and notify the sender. CEG-IP2

From: Sweeney, Beverly
To: Flanders, Scott; Chokshi, Nilesh
Cc: Lauron, Carolyn
Subject: Staffing Plan
Date: Tuesday, March 22, 2011 11:05:34 AM

Scott/Nilesh,

(b)(5)

Thanks!

Bev

From: Mayfield, Michael
To: Ader, Charles; Bergman, Thomas; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Lappin, Bob; Dudes, Laura
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572
Date: Tuesday, March 22, 2011 11:54:31 AM

Works for me

From: Ader, Charles
Sent: Tuesday, March 22, 2011 11:47 AM
To: Bergman, Thomas; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Having heard no one suggesting we hold the forum, I consider it cancelled.

From: Bergman, Thomas
Sent: Monday, March 21, 2011 3:41 PM
To: Ader, Charles; EATS Resource; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Subject: Re: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Agree
Thomas A. Bergman
Director, Division of Engineering
Office of New Reactors
301-415-7192 (O)
(b)(6) (C)

From: Ader, Charles
To: EATS Resource; Bergman, Thomas; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Lappin, Bob; Dudes, Laura
Sent: Mon Mar 21 13:47:47 2011
Subject: RE: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572

Given that the NRO All Hands meeting starts at 2 pm, I vote that we cancel the forum for this week.

-----Original Appointment-----
From: EATS Resource
Sent: Thursday, March 10, 2011 12:49 PM
To: Bergman, Thomas; Ader, Charles; Flanders, Scott; Gusack, Barbara; Matthews, David; Mayfield, Michael; Tracy, Glenn; Lappin, Bob
Cc: Dudes, Laura; Dixon-Herrity, Jennifer
Subject: Weekly Lappin/NRO Division Directors Meeting, Incident# 505572
When: Occurs every Wednesday effective 03/02/2011 until 03/31/2011 from 1:00 PM to 2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TBD

New Incident # 505572 required for metric reporting purposes for each month.

Weekly meeting between Bob Lappin and NRO Division Directors every Wednesday from 1 to 2:30 pm

From: Lauron, Carolyn
To: Williams, Donna
Cc: Martin, Karnisha; Flanders, Scott; Chokshi, Nilesh; Jones, Henry; Seber, Dogan
Subject: Status: DSER Presentation for NRO All Hands
Date: Tuesday, March 22, 2011 11:03:14 AM

Hi –

Karnisha Martin will be sending you the PowerPoint presentation file shortly after lunch.

The presentation is as follows:

- Introduction and Overview – Dr. Nilesh Chokshi
- Earthquakes and Nuclear Power Plants – Dr. Dogan Seber
- Tsunami Hazards – Dr. Henry Jones

Please let me know if you need more information.

Thanks,
Carolyn
2736

From: Holahan, Patricia
To: Blair, Tina; Lubinski, John; Flanders, Scott; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Scott, Catherine; Uhle, Jennifer
Subject: RE: REMINDER: OPM INTERVIEW (Headquarters Managers)
Date: Tuesday, March 22, 2011 12:27:08 PM

This conflicts with the SES Executive Development Seminar and also several managers are tied up in the Op Center.

-----Original Appointment-----
From: Blair, Tina
Sent: Tuesday, March 22, 2011 10:34 AM
To: Lubinski, John; Flanders, Scott; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Holahan, Patricia; Scott, Catherine; Uhle, Jennifer
Subject: FW: REMINDER: OPM INTERVIEW (Headquarters Managers)
When: Wednesday, March 23, 2011 1:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: N/A - Teleconference Bridge Line

Reminder – OPM Interview Teleconference tomorrow.

-----Original Appointment-----
From: Blair, Tina
Sent: Tuesday, March 08, 2011 1:21 PM
To: Blair, Tina; Lubinski, John; Tracy, Glenn; Flanders, Scott; Bergman, Thomas; Gusack, Barbara; Ader, Charles; Bower, Phyllis; Brown, Milton; Hiland, Patrick; Holahan, Patricia; McMillan, Joseph; Scott, Catherine; Uhle, Jennifer
Cc: Gartman, Michael; Ash, Darren; Garland, Stephanie; Dyer, Jim
Subject: OPM INTERVIEW REQUEST (Headquarters Managers)
When: Wednesday, March 23, 2011 1:30 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: N/A - Teleconference Bridge Line

<< File: NRC Managers Interview Guide.doc >>

Dear Managers:

You have been selected at random by the Office of Personnel Management (OPM) to participate in a group interview as part of an OPM audit of NRC's human resources program. OPM has provided us with advance copies of the interview questions (see attached). The interview has been scheduled for Wednesday March 23rd from 1:30 pm – 3:00 pm Eastern, and it will be conducted via a teleconference bridge line. **The Toll Free Number to call is 1-866-753-1184, and the participant pass code is** (b)(6) We ask for you to make your best effort to participate, but realize not everyone will be available.

If you have any questions/concerns please contact Tina Blair 301-415-0556 or Michael Gartman 301-415-7693.

Thank you for your assistance,

Tina Blair

Human Resources Specialist

U.S. Nuclear Regulatory Commission

Phone: 301-415-0556

Fax: 301-415-3818

E-Mail: Tina.Blair@nrc.gov

Mail Stop: 03-E17A

From: Zalcman, Barry
To: Garrett, Bobi
Cc: Flanders, Scott; Clayton, Brent; Cook, Christopher; Chokshi, Nilesh
Subject: Thank You
Date: Tuesday, March 22, 2011 4:33:51 PM

Bobi-

On behalf of Scott, Brent, Chris, and myself, I just wanted to take a moment to thank you and your team for your hospitality last week. It is always refreshing for us to see the best of the Federal government's efforts to find ways to further improve the quality of life that we enjoy in America. NREL is truly a National asset and we look forward to working more closely with you.

Unfortunately, Dr. Chokshi was needed elsewhere last week. We have become a little more apprehensive given the circumstances unfolding in Asia and the potential effects on energy policy and public attitudes; it will take time for the fog to lift. We plan to make progress on licensing issues for new facilities, albeit perhaps at a different pace than originally planned. We will continue to support our colleagues overseas and will enhance our oversight of the operating fleet in the U.S. to ensure that the systems and processes exist to deal with appropriate challenges. We cannot lose our principal focus on operational safety and will apply learn lessons from this experience to become familiar with the commonalities and differences that may exist between National practices.

It was quite apparent that the Lab Staff put thought into their presentations to ensure that we could become even more familiar with your capabilities and resources. Tom already provided a follow up with information on the RI&F Group. We will also look forward to the other presentation material that can be provided and will share it among our Staff.

Do not hesitate to stay in touch with us. We certainly look forward to working with NREL and will work to find the right opportunity to develop the relationship. Finally, thank Sarah for her coordination efforts; everything worked seamlessly.

Best regards.

Barry Zalcman
Senior Program Manager
NRO/DSER/RENV
(301) 415-2419

From: Hudson, Jody

To: Ader, Charles; Akstulewicz, Frank; Ash, Darren; Bahadur, Sher; Bailey, Marissa; Batkin, Joshua; Bergman, Thomas; Blount, Tom; Boger, Bruce; Boland, Anne; Borchardt, Bill; Boyce, Thomas (OIS); Brenner, Eliot; Brown, Frederick; Buchholz, Jeri; Burns, Stephen; Camper, Larry; Caniano, Roy; Carpenter, Cynthia; Case, Michael; Casto, Chuck; Chamberlain, Dwight; Chokshi, Nilesh; Christensen, Harold; Clifford, James; Cobey, Eugene; Coe, Doug; Cohen, Miriam; Collins, Elmo; Corbett, James; Cordes, John; Correia, Richard; Croteau, Rick; "Cunningham, Mark"; Dapas, Marc; Davis, Jack; Dean, Bill; Dingbaum, Stephen; Doane, Margaret; Dorman, Dan; Dudes, Laura; Dyer, Jim; Evans, Michele; Ficks, Ben; Flanders, Scott; Gallagher, Johanna; Galloway, Melanie; Gibson, Kathy; Gitter, Joseph; Givvines, Mary; Gody, Tony; Golder, Jennifer; Greene, Kathryn; Grobe, Jack; Hackett, Edwin; Haney, Catherine; Hiland, Patrick; Hirsch, Patricia; Holahan, Gary; Holahan, Patricia; Holian, Brian; Holonich, Joseph; Howard, Patrick; Howe, Allen; Howell, Art; Hudson, Jody; Huth, Virginia; Itzkowitz, Marvin; Johnson, Michael; Jones, Bradley; Jones, William; Kelley, Corenthis; Kennedy, Kriss; Kokajko, Lawrence; Krupnick, David; Lee, David; Lee, Samson; Leeds, Eric; Lew, David; Lewis, Robert; Lombard, Mark; Lorson, Raymond; Lubinski, John; Lui, Christiana; Tallarico, Alison; Bower, Phyllis; Brown, Milton; Cheok, Michael; Gusack, Barbara; Johns, Nancy; Kinneman, John; Layton, Michael; Luehman, James; Madden, Patrick; Mamish, Nader; Matthews, David; Maxin, Mark; Mayfield, Michael; McConnell, Keith; McCrary, Cheryl; McCree, Victor; McDermott, Brian; McGinty, Tim; McMillan, Joseph; Meyer, David; Miller, Charles; Miller, Chris; Mitchell, Reggie; Mohseni, Aby; Monninger, John; Moore, Scott; Moorman, James; Morris, Scott; Muessle, Mary; Munday, Joel; Nelson, Robert; Nieh, Ho; OBrien, Kenneth; Ogle, Chuck; Ordaz, Vonna; Pederson, Cynthia; Persinko, Andrew; Piccone, Josephine; Plisco, Loren; Poole, Brooke; Pruett, Troy; Pulliam, Timothy; Quay, Theodore; Rabideau, Peter; Reis, Terrence; Reyes, Luis; Reynolds, Steven; Rheaume, Cynthia; Rich, Thomas; Richards, Stuart; Roberts, Darrell; Rothschild, Trip; Ruland, William; Satorius, Mark; Schaeffer, James; Schmidt, Rebecca; Scott, Catherine; Shaffer, Mark; Shea, Joseph; Shear, Gary; Sheron, Brian; Skeen, David; Stewart, Sharon; Tappert, John; Thaggard, Mark; Tracy, Glenn; Tschiltz, Michael; Uhle, Jennifer; Vegel, Anton; Vietti-Cook, Annette; Virgilio, Martin; Weaver, Doug; Webber, Robert; Weber, Michael; Wert, Leonard; West, Steven; Westreich, Barry; Wiggins, Jim; Williamson, Edward; Wilson, Peter; Yerokun, Jimi; Young, Mitzi; Zimmerman, Roy; Zobler, Marian; Andersen, James; Ayres, David; Caldwell, Robert; Campbell, Andy; Clark, Jeff; Delligatti, Mark; Evans, Carolyn; Hawkins, Kimberly; Henderson, Pamela; Hsia, Anthony; Jackson, Deborah; Louden, Patrick; Lund, Louise; Ross-Lee, MaryJane; Scott, Michael; Shields, James; Shuaibi, Mohammed; Solorio, Dave; Thomas, Brian; Valentin, Andrea; Weerakkody, Sunil; Coplin, Seth; Cullison, David; Voytko, Victoria; R1DRSWORKFLOW RESOURCE; Dubose, Sheila; Madison, Wil; Daniel, Susan; Kemerer, Myron; Ousley, Elizabeth; Johnson, Susan; Spencer, Mary; R4 Calendar Resource; R4 CR-ECR Resource; Owen, Lucy; Tannenbaum, Anita; Chernoff, Margaret; Cochrum, Steven; Egli, Richard; Gutteridge, John; Lam, Donna; Miller, Mark; Morris, James; Ricci, John; Rutledge, Steven; Beckford, Kaydian; DORLCAL Resource; Hills, David; Stone, AnnMarie; Daley, Robert; Dickson, Billy; Skokowski, Richard; Peterson, Hironori; Lambert, Kenneth; Pelke, Patricia; Bloomer, Tamara; Lipa, Christine; R2DRS BRANCHCHIEF; Shehee, James; Franke, Mark; Giessner, John; Lara, Julio; Cameron, Jamnes; Ring, Mark; Kunowski, Michael; Riemer, Kenneth; Duncan, Eric; Bonser, Brian; DLRCalendar Resource; Landau, Mindy; DNMSCAL Resource; DMSSA Calendar Resource; Bumpass, Sheila; Daly, Jill; King, Donald; Pool, Stephen; Sanchez, Alba; Widdup, Joseph; Williams, Monique; Benner, Eric; Waters, Michael; Pstrak, David; Garcia-Santos, Norma; Habighorst, Peter; Mattingley, Joel

Cc: Johns, Nancy; Gallagher, Johanna; Tallarico, Alison

Subject: REMINDER - NRC Executive Leadership Seminar Tomorrow March 23rd.

Date: Tuesday, March 22, 2011 9:18:37 AM

This is a reminder that the next NRC Executive Leadership Seminar will be held tomorrow as originally scheduled.

I know that many of you may not be able to attend the live event due to your involvement in NRC's response to events in Japan. Please note that the ELS will be captured via video and made available for viewing on-demand from your computer within two weeks of the live event.

To all NRC SES and SES-CDP Graduates:

I am pleased to announce the next NRC Executive Leadership Seminar (ELS) scheduled for March 23rd.

The purpose of these seminars is to provide continual learning for the NRC's SES and to provide an opportunity to hear from various thought leaders on a range of topics relevant to leading in today's environment. They are intended to be both

informative and thought-provoking.

This upcoming ELS will take a different approach than previous seminars. A major focus of the next seminar will be on presentation of the latest organizational research conducted by the Corporate Executive Board on the topic of Employee Engagement and what drives it

Why is this topic important to NRC's leaders? The research data show that highly engaged employees are 57% more productive and are nine times less likely to leave. Simply put, this means any organization that's focused on high productivity and retention of top talent must include building strong employee engagement as part of its overall strategy.

The timing of this topic for the next ELS was chosen with purpose. The NRC is entering a new climate characterized by tighter budgets and the need to increase efficiencies. While maintaining high employee engagement has been important, it will become even more critical, and potentially more challenging to achieve in this new environment. Furthermore, as duplicative processes and functions are identified and ways to eliminate them are considered, it will be important to assess the potential adverse impacts those measures may have on employee engagement. Knowledge of the most important and sustaining drivers of employee engagement will be important in this regard, and will enable executives and senior managers to make informed decisions regarding impacts potential cost cutting measures may have on employee engagement.

Logistics and seminar information are below.

Please note that this email will also be resent to all of you as a calendar appointment.

I look forward to seeing you all at the March 23rd seminar.

-

Jody Hudson
Chief Learning Officer
Human Resources Training & Development
U.S. Nuclear Regulatory Commission

NRC Executive Leadership Seminar (ELS)

Speaker: Mr. Adam Cole, Corporate Executive Board (CEB)

Title of Presentation: Building Engagement Capital

Date: Wednesday, March 23, 2011

Time: 1:30pm-3:30pm

Location: HQ-TWFN-Auditorium and broadcast by video teleconference (VTC) to the regions, TTC, PDC and other HQ satellite offices upon request. POC for this event is Karmen Baretich, HR/HRTD (301-492-2290).

I encourage all serving members of the SES and SES CDP graduates to attend. I also encourage you to invite non-SES members of your leadership teams. A video recorded version of this program will also be made available approximately two weeks after the seminar presentation. Recorded ELSs are available for viewing on demand at http://papaya.nrc.gov/HRTD/employeeDevelopment/devprogs2.cfm?prog_id=23&subtitle=Executive%20Leadership%20Seminars

Description:

The title of the seminar is "Building Engagement Capital". The seminar will present the latest organizational research on employee engagement conducted by the Corporate Executive Board. Special emphasis will be on the major drivers contributing to employee engagement, and the relative strength and staying power of the various top drivers.

Program Outline:

Definition of Employee Engagement:
Engagement is the extent to which employees commit to something or someone in their organization, how hard they work, and how long they stay as a result of that commitment. An employee's level of engagement is directly correlated to their intent to stay with an organization as well as the amount of effort impacting their performance.

Outcomes of Employee Engagement:
Employees that are committed work 57% harder and are 9 times less likely to leave.

Key Engagement Drivers:
More than 300 potential drivers of engagement were analyzed and the top five drivers of engagement were identified.

Jody Hudson
Chief Learning Officer
Human Resources Training & Development

U.S. Nuclear Regulatory Commission
Mailstop: GW-4A01
301-492-2215

From: EUCI Events
To: Flanders, Scott
Subject: Nuclear Power PRA and Design Basis Courses in May
Date: Tuesday, March 22, 2011 11:47:38 AM

Nuclear Power Design Basis

May 3-4, 2011 ::
Rockville, MD

Nuclear Power Probabilistic Risk Assessment (PRA)

May 5-6, 2011 ::
Rockville, MD

Overviews

Recent international events emphasize the criticality of nuclear design basis. As the world moves forward in its consideration of new nuclear power development and production, significant emphasis is being placed on improved plant design and construction. Many companies participating in the last round of nuclear construction abandoned their nuclear product lines and services for a multitude of reasons. Nuclear support can incur significant additional costs if suppliers do not understand the legal foundation of their responsibilities and obligations in design basis. This course gives those new to nuclear generation an overview of the structure, purpose, and recent changes in nuclear generation regulations that control the plant design. **The course focuses on the nuclear generation plant design requirements for industry designers, constructors, suppliers, and operators. The realities of designing for catastrophic circumstances will be included in this detailed analysis.**

PDF Brochure | Pricing and Registration

This course introduces PRA probabilistic risk assessment history, PRA development, and nuclear risk assessment in nuclear power applications. The correct application of this process in nuclear operations is critical as the nuclear industry, based on recent international events, proceeds with extensive statistical safety analysis and review. It is designed for those who use PRA results, and need to understand PRA uses, methods, and issues, but who don't directly develop PRA themselves. The course will give attendees a solid understanding of the history behind PRA, reasons for developing PRA, how they are constructed, their assumptions and limits, types of applications, methods of development, and issues that remain to be resolved with their use in nuclear power applications.

PDF Brochure | Pricing and Registration

Topics Include

- Defining nuclear plant design basis
- Primary sources of design basis inputs
- Differences between safety-related, commercial grade, and basic components
- Difference between safety-related and non-safety-related functions, SSC, and their critical characteristics
- Operability and dedication
- Appendix A requirements
- Key elements of Appendix B as they apply to design
- How ASME code fits into design basis

Full Agenda

- Discuss PRA background and deterministic safety analysis
- Recognize deterministic safety analysis limits
- Relate PRA use to events like Three Mile Island
- Identify simple PRA elements relating those to deterministic analysis
- Interpret common PRA elements and standards
- Explain PRA role as a tool assessing nuclear risks
- Describe PRA role in new nuclear plant (10 CFR) Part 52, Combined Licensing
- Analyze PRA limits
- Examine likely directions for future PRA development

Full Agenda

Instructed By

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

Instructor Bio

Scott Beck, Independent Consultant, Safety and Risk Assessment

Instructor Bio

Testimonials from Past Attendees

"In my opinion, design basis and regulatory framework could not have been delivered more succinctly. This was a very beneficial crash course to propel your understanding of how things worked and should work. Keep up the good work!"
-Nuclear engineer, Oak Ridge National Laboratory

"Great instructor. Makes the material interesting while expanding your knowledge."
-Licensing engineer, Mitsubishi Nuclear Energy Systems

"This course was a good source of information for individuals – even those without a nuclear engineering background – on the current and possible future status of nuclear power design and regulation."
-Special agent, Nuclear Regulatory Commission

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From: Jasinski, Robert
To: Lauron, Carolyn
Cc: Chokshi, Nilesh; Flanders, Scott
Subject: RE: ACTION: Update of Info Digest Material Due 3/22
Date: Tuesday, March 22, 2011 6:38:00 AM

Many, many thanks!!!

From: Lauron, Carolyn
Sent: Tuesday, March 22, 2011 6:37 AM
To: Jasinski, Robert
Cc: Chokshi, Nilesh; Flanders, Scott
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

DSER has no changes.

From: Jasinski, Robert
Sent: Tuesday, March 22, 2011 5:30 AM
To: Lauron, Carolyn
Cc: Chokshi, Nilesh; Flanders, Scott
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Carolyn:

Please provide me with your changes by noon today, both changes made in the file location provided and a hard copy of what the changes were. We need to share them with the Front

Office. Thanks.

From: Rosales-Cooper, Cindy
Sent: Monday, March 21, 2011 3:15 PM
To: Jasinski, Robert
Cc: Usilton, William; King, Shannon; Williams, Donna
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

Bob,
The Front Office has no updates.

We would like to see the updates provided by the other Divisions.

Thanks
Cindy

From: Jasinski, Robert
Sent: Monday, March 21, 2011 11:59 AM
To: Lauron, Carolyn; Williams, Donna; Rosales-Cooper, Cindy; Rivera-Varona, Aida; Erwin, Kenneth
Cc: King, Shannon; McGovern, Denise; Araguas, Christian; Clark, Theresa
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Dear Colleagues:

With regard to the attached green ticket on updating the agency's Info Digest, please be reminded that any changes (***including charts, graphs, etc***)

need to be made to the existing Info Digest file by **noon tomorrow (Tuesday, March 22).** File Location is under Special Instructions on the EDATS page. Here's the liink:

http://portal.nrc.gov/edo/staff/CPI/Shared%20Documents/Forms.AllItems.aspx

Once all changes are completed, please notify William Usilton, Shannon King and me that they have been made in a full and accurate manner.

To date, ***we have received notification from Christian (ARP), Theresa (DSRA), and Denise McGovern (DE)***.

Please contact Shannon or me if you have any inquiries. Look forward to your notification tomorrow.

As always, many thanks. Regards, Bob.

From:	McIntosh, Angela
To:	Bloomer, Tamara; Boland, Anne; Burgess, Michele; Cai, June; Cain, Chuck; Campbell, Vivian; Caniano, Roy; Carpenter, Cynthia; Collins, Daniel; Deegan, George; Felsher, Harry; Flanders, Scott; Foster, Jack; Howell, Art; Lambert, Kenneth; Lewis, Robert; Lipa, Christine; Lorson, Raymond; Louden, Patrick; Luehman, James; McConnell, Keith; McCraw, Aaron; Miller, Charles; Moore, Scott; Nick, Joseph; Pelke, Patricia; Spitzberg, Blair; Usilton, Brenda; Villar, Sheryl; White, Duane; White, Duncan; Whitten, Jack
Subject:	February 2011 Report on Materials Licensing, Inspections and Events
Date:	Tuesday, March 22, 2011 10:10:39 AM
Attachments:	2011 02 (FY 2011) rpt.pdf

Please see attached and have a great day!

Angela R. McIntosh
Office of Federal and State Materials
and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Angela.McIntosh@nrc.gov
(301) 415-5030

TO: DNMS Directors

FROM: Angela R. McIntosh, FSME/MSSA

SUBJECT: REPORT ON MATERIALS LICENSING, INSPECTIONS, AND EVENTS FEBRUARY 2011

Attached is the report on licensing, inspections, and certified events. If you have questions, please contact me at Angela.McIntosh @nrc.gov or (301) 415-5030.

Attachment: As stated

DISTRIBUTION:

HQ	RI	RII	RIII	RIV
Burgess, M	Collins, D	None	Bloomer, T	Cain, C
Boland, A	Lorson, R		Lambert, K	Campbell,V
Carpenter, C	Nick, J		Lipa, C	Caniano, R
Cai, J	Villar, S		Louden, P	Howell, Art
Deegan, G			Pelke, P	Spitzberg, B
Felsher, H				Whitten, J
Flanders, S				
Foster, J				
Lewis, R				
Luehman, J				
McConnell, K				
McCraw, A				
Moore, S				
Miller, C				
Usilton, B				
White, D				
White, DE				

MONTHLY STATISTICS REPORT
MATERIALS LICENSING, INSPECTION, AND EVENTS DATA
FEBRUARY 2011

TABLE 1 - STRATEGIC OUTCOMES FY 2011 Reportable to Congress		
	METRIC	ACTUAL
Prevent the occurrence of any actue radiation exposures resulting in fatalities	0	0
Prevent the occurrence of any releases of radioactive materials that result in significant radiation exposures [1]	0	0
Prevent the occurrence of any releases of radioactive materials that cause significant environmental impacts. [2]	0	0

[1] "Significant radiation exposures" are defined as those that result in unintended permanent functional damage to an organ or a physiological system as determined by a physician, in accordance with Abnormal Occurrence Criterion I.A.3.

[2] Releases that have the potential to cause adverse impacts are those that exceed the limits for reporting abnormal occurrences as given by Abnormal Occurrence criterion 1.N.1 [normally 5,000 times Table 2 (air and water) of Appendix B, Part 20]

TABLE 2 - FY 11 LICENSING BY ORGANIZATION

Cumulative for FY 2011

February

	Received	Completed	Pending
HQ Exempt Distribution	31	28	15
HQ SS&D	13	16	3
RI	236	235	73
RIII	383	312	216
RIV	157	180	88
Total	820	771	395

TABLE 3 - FY 2010 DATA ON PERFORMANCE MEASURES

(Events Certified to Have Met the Performance Measures)

Date of Events Report: March 3, 2011 **Date of Certification: March 3, 2011**

Division of Waste Management and Environmental Protection

No events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A[1]

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

No radiological releases to the environment that exceed applicable limits

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

Division of Materials Safety and State Agreements

< 3 events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A[1]

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Mercy Medical Center	CO-005-01	100245	03/16/2010	3
2	Megahy, Mohamed (occurred in FY 07)	IL-02032-01	100319	05/01/2007	
3	Department of the Army	53-00458-04	100400	06/07/2010	

< 2 radiological releases to the environment that exceed applicable regulatory limits[2]

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

< 300 losses of control of licensed material per year

No.	Licensee Name	License No.	NMED No.	Event Date	Count
	Various	Various	Various	Various	187

< 30 events per year resulting in radiation over-exposures from radioactive material that exceed applicable regulatory limits[3]

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Owensby and Kritikos, Inc.	LA-2234-L01	090837	11/12/2009	6
2	FMC Corp.	49-04295-01	090883	12/17/2009	
3	Blazer Inspection	TX-L04619	100112	12/31/2009	
4	Georgia Institute of Technology	GA-A19-L42	100198	04/13/2010	
5	Ohio State University Medical Center	OH-02110250037	100209	04/16/2010	
6	IBA Molecular North America	TX-L06174	100383	07/16/2010	

[1] Events that meet this performance measure are potential until the Commission determines that they have met AO Criteria 1.A. This determination is published in NUREG00-90, "Report to Congress on Abnormal Occurrences."

[2] As of January 22, 2009, events meeting this measure must meet 20.2203(a)(3)(ii), and result in a release of radioactive material that cannot be retrieved or remediated through decontamination efforts

[3] Beginning FY 05, for the purpose of tracking these metrics in this report and in the MSSA Operational Plan report, overexposures are considered to be a subtype of overexposure events that exceed Abnormal Occurrence Criteria 1.A

Table 3 - FY 10 Data on Performance Measures (Certified Events) (continued)

Division of Materials Safety and State Agreements					
< 45 medical events per year					
No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Michigan, University of	21-00215-04	090786	10/14/2009	41
2	Boca Raton Community Hospital	FL-0550-1	090840	10/26/2009	
3	Cookeville Regional Medical Center	TN-R-71026-D10	090885	12/15/2009	
4	Department of Veterans Affairs	03-01535-01	100009	12/30/2009	
5	QHG of Indiana, Inc.	13-01535-01	100031	01/14/2010	
6	The Jewish Hospital	OH-02120310029	100049	01/21/2010	
7	The Jewish Hospital	OH-02120310029	100053	12/28/2009	
8	Massachusettes General Hospital	MA-60-0055	100071	02/10/2010	
9	University Community Hospital	FL-0549-3	100074	02/14/2010	
10	University of Kentucky	NR	100079	02/23/2010	
11	Christiana Care Health System	07-12153-02	100082	01/18/2010	
12	University of Pennsylvania	PA-0131	100085	01/21/2010	
13	Coral Springs Clinic	FL-3109-2	100118	03/11/2010	
14	Mayo Clinic	MN-1047-205-55	100148	03/23/2010	
15	University of Maryland	MD-07-014-05	100174	01/27/2010	
16	Mary Bird Perkins Cancer Center	LA-2651-L01	100219	03/12/2010	
17	St. Mary's Regional Medical Center	NV-16-12024402	100263	03/16/2010	
18	Bristol Hospital, Inc.	06-02057-01	100290	01/12/2010	
19	Lovelace Medical Center	NM-MI-210-94	100294	05/04/2010	
20	Oncology Hematology Consultants	TX-L05919	100298	06/08/2010	
21	Medical College of Wisconsin	WI-079-1104-01	100305	06/09/2010	
22	Not Reported (New York licensee)	Not Reported	100310	05/26/2010	
23	University of Minnesota	MN-1049-206-27	100313	06/15/2010	
24	Lancaster General Hospital	PA-0233	100314	06/03/2010	
25	Sutter Health Medical Physics Center	CA-2964-34	100320	06/17/2010	
26	Iredell Memorial Hospital	NC-049-0412-2	100346	05/05/2010	
27	West Virginia University Hospital	47-23066-02	100347	01/20/2010	
28	University of Pennsylvania	PA-0131	100371	07/07/2010	
29	Univeristy of New Mexico	NM-BM-233	100386	07/21/2010	
30	Rhode Island Hospital	RI-7D-051-01	100388	04/21/2010	
31	Greater Baltimore Medical Center	MD-05-002-03	100397	07/09/2010	
32	Rush Presbyterian Saint Lukes	IL-01766-01	100427	08/18/2010	
33	University of Maryland	MD-07-014-01	100430	03/05/2010	
34	Providence Hospital	21-02802-03	100448	08/30/2010	
35	Marshfield Clinic	WI-141-1162-01	100461	09/09/2010	
36	Cleveland Clinic Foundation	OH-02110180013	100483	09/27/2010	
37	Baylor Radiosurgery Center	TX-L05842	100492	09/30/2010	
38	Riverside Methodist Hospital	OH-02120250070	100510	04/06/2010	
39	Henry Ford Macomb Hospital	21-11850-01	100601	07/07/2010	
40	Medical Center at Bowling Green	KY-202-124-26	110015	07/13/2010	
41	Guthrie Healthcare Systems	PA-0012	110116	10/05/2009	

TABLE 4 - FY 2011 DATA ON PERFORMANCE MEASURES

(Events Certified to Have Met the Performance Measures)

Date of Events Report: March 3, 2011 **Date of Certification: March 3, 2011**

Division of Waste Management and Environmental Protection

No events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A

No.	Licensee Name	License No.	NMED No.	Event Date	Count

No radiological releases to the environment that exceed applicable limits

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

Division of Materials Safety and State Agreements

≤ 3 events with radiation exposures to the public and occupational workers that exceed AO Criteria 1A

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Dept. of the Navy	45-23645-01NA	110073	01/12/2011	1

≤ 2 radiological releases to the environment that exceed applicable regulatory limits

No.	Licensee Name	License No.	NMED No.	Event Date	Count
					0

≤ 300 losses of control of licensed material per year

No.	Licensee Name	License No.	NMED No.	Event Date	Count
	Various	Various	Various	Various	40

≤ 30 events per year resulting in radiation over-exposures from radioactive material that exceed applicable regulatory limits

No.	Licensee Name	License No.	NMED No.	Event Date	Count
1	Massachusetts General Hospital	MA-RCN01762	110065	12/31/2010	1

[1] Events that meet this performance measure are potential until the Commission determines that they have met AO Criteria 1.A. This determination is published in NUREG00-90, "Report to Congress on Abnormal Occurrences."

[2] As of January 22, 2009, events meeting this measure must meet 20.2203(a)(3)(ii), and result in a release of radioactive material that cannot be retrieved or remediated through decontamination efforts

[4] Beginning FY 05, for the purpose of tracking these metrics in this report and in the MSSA Operational Plan report, overexposures are considered to be a subtype of overexposure events that exceed Abnormal Occurrence Criteria 1.A

Table 4 - FY 11 Data on Performance Measures (Certified Events) (continued)

Division of Materials Safety and State Agreements					
< 45 medical events per year					
No.	Licensee	License No.	NMED No.	Event Date	Count
1	Community Hospitals of Indiana	13-06009-01	100506	10/06/2010	16
2	Liberty Hospital	24-16178-01	100507	10/06/2010	
3	Cleveland Clinic Foundation	OH-02110180013	100543	10/26/2010	
4	Warren General Hospital	PA-0083	100553	11/02/2010	
5	Duke University Medical Center	NC-032-0247-4	100554	10/22/2010	
6	Mayo Clinic	MN-1047-206-55	100563	11/10/2010	
7	Duke University Medical Center	NC-032-0247-4	100569	11/13/2010	
8	Prostate Seed Center, LLC	CO-972-01	100591	12/02/2010	
9	Oakwood Hospital - Annapolis Center	21-11457-02	100597	12/04/2010	
10	Banner Good Samaritan Medical Center	AZ-07-478	110005	12/22/2010	
11	Rush University Medical Center	IL-01766-01	110032	11/23/2010	
12	Eastern Regional Medical Center	PA-0980	110052	01/19/2011	
13	Cleveland Clinic Foundation	OH-02110180013	110056	12/08/2010	
14	Rex Healthcare	NC-092-0160-1	110088	02/08/2011	
15	Mercy Medical Center	IA-0339157HDR	110104	02/10/2011	
16	Univ. of Texas Southwestern Medical Ctr.	TX-L00279	110108	02/15/2011	

TABLE 5 PART I - TIMELINESS OF COMPLETED INSPECTIONS

Metric: 98% inspections completed in all Regions.

FY 2011 - Quarter 1

Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Oct	33	0	31	0	11	0	268	1
Nov	33	0	47	1	31	0		
Dec	28	0	41	0	13	0		
Totals	**94**	**0**	**119**	**1**	**55**	**0**		

Qtr 1 Metric: GREEN

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 2

Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Jan	25	0	47	0	16	0		
Feb	10	0	43	0	51	0		
Mar								
Totals								

Qtr 2 Metric:

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 3

Region:	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Apr								
May								
Jun								
Totals								

Qtr 3 Metric:

See Table 5 Pt. II for list of overdue licensees.

FY 2011 - Quarter 4

Region	RI		RIII		RIV		QTR Issued	QTR Total Overdue
Month	No. Done	No. Overdue	No. Done	No. Overdue	No. Done	No. Overdue		
Jul								
Aug								
Sep								
Totals								

Qtr 4 Metric:

See Table 5 Pt. II for list of overdue licensees

TABLE 5 PART II - LIST OF OVERDUE LICENSEE INSPECTIONS

FY 2011 - Quarter 1			
RI	**October**	**November**	**December**
Overdue Licensee	NONE	NONE	NONE
RIII	**October**	**November**	**December**
Overdue Licensee	NONE	St. Mary's of Michigan Medical Center [1]	NONE
RIV	**October**	**November**	**December**
Overdue Licensee	NONE	NONE	NONE

[1] Due November 1, completed November 2.

FY 2011 - Quarter 2			
RI	**January**	**February**	**March**
Overdue Licensee	NONE	NONE	
RIII	**January**	**February**	**March**
Overdue Licensee	NONE	NONE	
RIV	**January**	**February**	**March**
Overdue Licensee	NONE	NONE	

FY 2011 - Quarter 3			
RI	**April**	**May**	**June**
Overdue Licensee			
RIII	**April**	**May**	**June**
Overdue Licensee			
RIV	**April**	**May**	**June**
Overdue Licensee			

FY 2011 - Quarter 4			
RI	**July**	**August**	**September**
Overdue Licensee			
RIII	**July**	**August**	**September**
Overdue Licensee			
RIV	**July**	**August**	**September**
Overdue Licensee			

TABLE 6 - TIMELINESS OF INSPECTION REPORT ISSUANCE

February Metric

GREEN

Metric Legend

Issue 85% of inspection rpts in ≤ 90 days: GREEN

Issue >85% of inspection rpts in 90 days: RED

ROUTINE INSPECTIONS					TEAM INSPECTIONS				
Month	Region	No. Reports Issued	No. Issued in 30 Days	Percent on Time	Month	Region	No. Reports Issued	No. Issued in 45 Days	Percent on Time
OCT	I	31	31	100%	OCT	I	2	2	100.00%
	III	25	25	100%		III	0	0	
	IV	8	8	100%		IV	0	0	
Total		64	64	100%	Total		2	2	100%
NOV	I	33	33	100%	NOV	I	0	0	
	III	34	34	100%		III	0	0	
	IV	24	23	96%		IV	0	0	
Total		91	90	99%	Total		0	0	
DEC	I	28	26	93%	DEC	I	0	0	
	III	38	38	100%		III	0	0	
	IV	20	20	100%		IV	0	0	
Total		86	84	98%	Total		0	0	
QTR 1		**241**	**238**	**99%**	**QTR 1**		**2**	**2**	**100%**
JAN	I	25	25	100%	JAN	I	0	0	
	III	32	32	100%		III	0	0	
	IV	17	17	100%		IV	0	0	
Total		74	74	100%	Total		0	0	
FEB	I	52	50	96%	FEB	I	0	0	
	III	29	29	100%		III	0	0	
	IV	14	12	86%		IV	0	0	
Total		95	91	96%	Total		0	0	
MAR	I			#DIV/0!	MAR	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!			0	0	
QTR 2		**169**	**165**	**98%**	**QTR 2**		**0**	**0**	

ROUTINE INSPECTIONS					TEAM INSPECTIONS				
Month	Region	Rpts Issued	Issued in 30 Days	Percent on Time	Month	Region	Rpts Issued	Issued in 30 Days	Percent on Time
APR	I			#DIV/0!	APR	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	
MAY	I			#DIV/0!	MAY	I			#DIV/0!
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	#DIV/0!
JUN	I			#DIV/0!	JUN	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!			0	0	#DIV/0!
QTR 3		0	0	#DIV/0!	QTR 3				
JUL	I			#DIV/0!	JUL	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	
AUG	I			#DIV/0!	AUG	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	
SEP	I			#DIV/0!	SEP	I			
	III			#DIV/0!		III			
	IV			#DIV/0!		IV			
Total		0	0	#DIV/0!	Total		0	0	
QTR 4		0	0	#DIV/0!	QTR 4				
FY Total		410	403	98%	FY Total		2	2	100%

Table 6 Page 2 of 2

TABLE 7 - MATERIALS LICENSING TIMELINESS				
	Completed within Goal		Total Completed	Percent
New Applications & Amendments	90 days	671	706	95.0%
	1 year	661	706	93.6%
Renewals	180 days	63	66	95.5%
	2 years	65	66	98.5%
SS&D	180 days	16	16	100.0%
	2 years	16	16	100.0%

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

LTS REPORT DATE: March 02, 2011

PERFORMANCE MEASURES METRICS	
85% and above:	GREEN
80 % TO 84%:	YELLOW
Below 80%:	RED

ALL LICENSING ACTIONS

REGIONS AND HEADQUARTERS

	TOTAL
Number Received	820
Number Completed	771
Pending	395

TIMELINESS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New/Amended Licenses	706	671	95.04%	GREEN	661	93.63%

Renewals & SS&Ds	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
	82	79	96.34%	GREEN	81	98.78%

REGIONS ONLY

ALL LICENSING ACTIONS (New Applications + Renewed Licenses + Amended Licenses)

	TOTAL
Licenses Received	776
Licenses Completed	727
Pending (02/28/2011)	377

NEW APPLICATIONS

	TOTAL	In 90 Days	% in 90 Days	Metric
New Applications Received	39			
New Applications Completed	58	53	91.38%	GREEN
Pending (02/28/2011)	29			

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days	Metric
Number Received	124			
Number Completed	65	63	96.92%	GREEN
Pending (02/28/2011)	108			

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days	Metric
Number Received	613			
Number Completed	604	584	96.69%	GREEN
Pending (02/28/2011)	240			

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

HEADQUARTERS

(Exempt Distributions and Sealed Sources and Devices)

ALL HQ LICENSING ACTIONS

	TOTAL
Number Received	44
Number Completed Actions	44
Pending	18
Older Pending	6

NEW LICENSES FOR EXEMPT DISTRIBUTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New Applications Received	9					
New Applications Completed	10	4	40.00%	**RED**	10	100.00%
Pending (02/28/2011)	7					
Older Pendings	6					

RENEWED EXEMPT DISTRIBTION LICENSES

	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
Number Received	4					
Number Completed	1	0	0.00%	**RED**	1	0.00%
Pending (02/28/2011)	3					
Older Pendings	0					

AMENDED EXEMPT DISTRIBUTION LICENSES

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
Number Received	18					
Number Completed	17	14	82.35%	**YELLOW**	17	100.00%
Pending (02/28/2011)	5					
Older Pendings	0					

SEALED SOURCES AND DEVICES

	TOTAL	In 180 Days	% in 180 Days	Metric	In 2 Yrs	% in 2 Yrs
Number Received	13					
Number Completed	16	16	100.00%	**GREEN**	16	100.00%
Pending (02/28/2011)	3					
Older Pendings	0					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In Required Time	% Within Required Time	Metric
New, Renewed, Amended, & SS&D	44	34	77.27%	**RED**

For exempt licensing, the metric does not account for one SS&D review, which may take up to 180 days to review.

Totals are cumulative throughout the Fiscal Year.

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION I

ALL LICENSING ACTIONS

	TOTAL
Number Received	236
Number Completed	235
Pending (02/28/2011)	73
Older Pendings	0

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	14					
New Applications Completed	16	15	93.75%	GREEN	16	100.00%
Pending (02/28/2011)	6					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	18					
Number Completed	19	18	94.74%	GREEN	18	94.74%
Pending (02/28/2011)	10					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	204					
Number Completed	200	199	99.50%	GREEN	200	100.00%
Pending (02/28/2011)	57					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New + Amended Licenses	216	214	99.07%	GREEN	216	100.00%

Totals are cumulative throughout the Fiscal Year

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION III

ALL LICENSING ACTIONS

	TOTAL
Number Received	383
Number Completed	312
Pending (02/28/2011)	216
Older Pending	12

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	10					
New Applications Completed	17	15	88.24%	GREEN	16	94.12%
Pending (02/28/2011)	16					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	89					
Number Completed	38	37	96.34%	GREEN	38	100.00%
Pending (02/28/2011)	84					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	284					
Number Completed	257	254	98.83%	GREEN	257	100.00%
Pending (02/28/2011)	116					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New + Amended Licenses	274	269	98.18%	GREEN	273	99.64%

Totals are cumulative throughout the Fiscal Year

TABLE 8 - FEBRUARY 2011 LICENSING STATISTICS

REGION IV

ALL LICENSING ACTIONS

	TOTAL
Number Received	157
Number Completed	180
Pending (02/28/2011)	88
Older Pending	2

NEW LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
New Applications Received	15					
New Applications Completed	25	23	92.00%	GREEN	25	100.00%
Pending (02/28/2011)	7					

RENEWED LICENSES

	TOTAL	In 180 Days	% in 180 Days		In 2 Yrs	% in 2 Yrs
Number Received	17					
Number Completed	8	8	100.00%	GREEN	8	100.00%
Pending (02/28/2011)	14					

AMENDED LICENSES

	TOTAL	In 90 Days	% in 90 Days		In 1 Yr	% in 1 Yr
Number Received	125					
Number Completed	147	131	89.12%	GREEN	147	100.00%
Pending (02/28/2011)	67					

TIMELINESS of COMPLETED LICENSING ACTIONS

	TOTAL	In 90 Days	% in 90 Days	Metric	In 1 Yr	% in 1 Yr
New + Amended Licenses	172	154	89.53%	GREEN	172	100.00%

Totals are cumulative throughout the Fiscal Year.

TABLE 9

Office of Federal and State Materials and Environmental Management Programs
Division of Material Safety and State Agreements
Source Management and Protection Branch

Sealed Source and Device Actions
Fiscal Year 2011

Month	Received	Completed	Transfers to Inactive Status	New Actions and Amendments	Total Pending
Carry-over					
					0
October	2	4			0
November	3	4			0
December	3	4			5
January	2	0			4
February	3	4			3
March					
April					
May					
June					
July					
August					
September					
Totals	**13**	**16**			**3**

From: Quinn, Laura
To: Fetter, Allen
Cc: Flanders, Scott
Subject: FW: Drop in
Date: Tuesday, March 22, 2011 9:19:38 AM

FYI

-----Original Message-----
From: Lutchenkov, Dimitri [mailto:dimitri.lutchenkov@unistarnuclear.com]
Sent: Tuesday, March 22, 2011 9:18 AM
To: Quinn, Laura
Subject: Drop in

I am still planing to come at 1p today to discuss CC3 FEIS schedule. Getting the schedule back on track is a very critical issue for UniStar that requires a face to face.

I am in a MDE meeting all morning and not reachable by phone.

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

From:	System Administrator
To:	dimitri.lutchenkov@unistarnuclear.com
Subject:	Undeliverable: Dropin
Date:	Tuesday, March 22, 2011 9:52:35 AM
Attachments:	Dropin.msg

Your message did not reach some or all of the intended recipients.
Subject: Dropin
Sent: 3/22/2011 9:53 AM
The following recipient(s) cannot be reached:
dimitri.lutchenkov@unistarnuclear.com on 3/22/2011 9:53 AM
None of your e-mail accounts could send to this recipient.

Attachment Dropin.msg (2560 Bytes) cannot be converted to PDF format.

From: ExtensionRequest, EDO
To: Lauron, Carolyn
Cc: Wentzel, Michael; Andersen, James; Pham, Bo; RidsNroMailCenter Resource; Flanders, Scott; Chokshi, Nilesh; Berry, Lee; Williams, Donna; Doyle, Daniel; Coates, Anissa; Correa, Yessie; Sanfilippo, Nathan
Subject: RE: NRO/DSER Acceptance and Extension Request: Request to Reassign Green Ticket G20110170
Date: Tuesday, March 22, 2011 7:50:09 AM

Carolyn,

OEDO and SECY have approved your extension request. The new OEDO and SECY due date is 04/15/11.

Also, please have staff notify the requester of the delay.

Thanks,
Kathy

From: Lauron, Carolyn
Sent: Friday, March 18, 2011 12:56 PM
To: ExtensionRequest, EDO
Cc: Wentzel, Michael; Andersen, James; Pham, Bo; RidsNroMailCenter Resource; Flanders, Scott; Chokshi, Nilesh; Berry, Lee; Williams, Donna; Doyle, Daniel; Coates, Anissa; Correa, Yessie
Subject: NRO/DSER Acceptance and Extension Request: Request to Reassign Green Ticket G20110170

Hi –

I have discussed this action with Nilesh Chokshi (Deputy Director, NRO/DSER) and I am responding on his behalf to accept this ticket.

NRO/DSER is also requesting an extension until 4/15 to respond to the ticket given its awareness of it on two days ago (despite the document's incoming date of 2/18/11).

Please let me know if you need more information.

Thanks,
Carolyn
2736

From: Pham, Bo
Sent: Friday, March 18, 2011 11:39 AM
To: Andersen, James
Cc: Lauron, Carolyn; Wentzel, Michael
Subject: RE: Request to Reassign Green Ticket G20110170

Jim,

We got Scott's tacit okay via Carolyn Lauron, his TA. Carolyn, can you confirm?
Thanks.

Bo Pham

Chief, Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-8450

From: Andersen, James
Sent: Friday, March 18, 2011 11:31 AM
To: Pham, Bo
Subject: RE: Request to Reassign Green Ticket G20110170

Bo, in accordance with the transfer guidance, the mailroom will need to know that NRR got the NRO Division Director's okay. Did you get the okay from Scott Flanders or Nilesh Chokshi? Thanks.

Jim A.

From: Pham, Bo
Sent: Friday, March 18, 2011 11:20 AM
To: Andersen, James
Subject: RE: Request to Reassign Green Ticket G20110170

Hi Jim,

We made sure to connect with NRO & got their agreement before asking Brian to make this request. Thanks.

Bo Pham
Chief, Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-8450

From: Andersen, James
Sent: Friday, March 18, 2011 10:42 AM
To: Holian, Brian; Pham, Bo; Galloway, Melanie; FAST Resource; Chey, Sonary; Lauron, Carolyn
Cc: ExtensionRequest, EDO
Subject: RE: Request to Reassign Green Ticket G20110170

Brian,

We thought NRR was the right office because Dave Pelton was copied on the incoming, and NRR has been involved with these folks in the past. It is not clear to me why NRO should have the lead. However, if NRR and NRO both agree to the reassignment, let the EDO mailroom know and we will make the change.

Also, an e-mail response is fine, we can't change it to "for appropriate action" because SECY did not give us that option.

Jim A.

From: Holian, Brian
Sent: Thursday, March 17, 2011 2:05 PM
To: ExtensionRequest, EDO
Cc: FAST Resource; Chey, Sonary; Pham, Bo; Lauron, Carolyn; Galloway, Melanie
Subject: FW: Request to Reassign Green Ticket G20110170

Please reassign ticket number G20110170 relating to the 2011 Water Resources Program for the Susquehanna River Basin from NRR to NRO.

The basis for reassignment is that no license renewal project is currently in-house, or projected to be submitted, that will affect the Susquehanna River; therefore, NRR does not have relevant information that can be provided to respond to this request. NRO, however, may have relevant input pertaining to applications for new reactor licensing.

(b)(5)

Thank you...
Any questions...please cc: Bo Pham
- Brian

From: Lutchenkov, Dimitri
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin
Date: Tuesday, March 22, 2011 10:38:54 AM

I appreciate that but would you have any reservation of me dropping in on Laura for 15 minutes to discuss the schedule going forward next week (assuming the USACE does complete all their FEIS deliverable)? I will be next door at our White Flint office anyway.

Dimitri Lutchenkov
Director, Environmental Affairs
UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 10:31 AM, "Flanders, Scott" <Scott.Flanders@nrc.gov> wrote:

(b)(5)

Scott

From: Lutchenkov, Dimitri [mailto:dimitri.lutchenkov@unistarnuclear.com]
Sent: Tuesday, March 22, 2011 10:03 AM
To: Flanders, Scott
Cc: Quinn, Laura; Fetter, Allen; Gibson, Gregory T
Subject: Re: Dropin

(b)(5)

Dimitri Lutchenkov

Director, Environmental Affairs

UniStar Nuclear Energy

Sent from my iPhone

On Mar 22, 2011, at 9:56 AM, "Flanders, Scott" <Scott.Flanders@nrc.gov> wrote:

I am not sure this was delivered to you, so I am forwarding it to be sure.

Scott

From: Flanders, Scott
Sent: Tuesday, March 22, 2011 9:53 AM
To: 'dimitri.lutchenkov@unistarnuclear.com'
Cc: Quinn, Laura; Fetter, Allen; Chokshi, Nilesh
Subject: Dropin

(b)(5)

Scott

>>> This e-mail and any attachments are confidential, may contain legal, professional or other privileged information, and are intended solely for the addressee. If you are not the intended recipient, do not use the information in this e-mail in any way, delete this e-mail and notify the sender. CEG-IP2

From: Zalcman, Barry
To: Cook, Christopher
Cc: Flanders, Scott
Subject: RE: Geoscience and assessment of existing power plants ... and potential new reactor sites
Date: Tuesday, March 22, 2011 9:12:05 AM

Every BC is entitled to a project. (b)(5) [redacted]
(b)(5) [redacted]

From: Cook, Christopher
Sent: Friday, March 18, 2011 10:58 AM
To: Flanders, Scott; Zalcman, Barry
Subject: Fw: Geoscience and assessment of existing power plants ... and potential new reactor sites
Importance: High

(b)(5) [redacted]

Chris

Sent from U.S. NRC BlackBerry
(b)(6)

From: Jasinski, Robert
To: Lauron, Carolyn
Cc: Chokshi, Nilesh; Flanders, Scott
Subject: ACTION: Update of Info Digest Material Due 3/22
Date: Tuesday, March 22, 2011 5:29:49 AM
Importance: High

Carolyn:

Please provide me with your changes by noon today, both changes made in the file location provided and a hard copy of what the changes were. We need to share them with the Front

Office. Thanks.

From: Rosales-Cooper, Cindy
Sent: Monday, March 21, 2011 3:15 PM
To: Jasinski, Robert
Cc: Usilton, William; King, Shannon; Williams, Donna
Subject: RE: ACTION: Update of Info Digest Material Due 3/22

Bob,
The Front Office has no updates.

We would like to see the updates provided by the other Divisions.

Thanks
Cindy

From: Jasinski, Robert
Sent: Monday, March 21, 2011 11:59 AM
To: Lauron, Carolyn; Williams, Donna; Rosales-Cooper, Cindy; Rivera-Varona, Aida; Erwin, Kenneth
Cc: King, Shannon; McGovern, Denise; Araguas, Christian; Clark, Theresa
Subject: ACTION: Update of Info Digest Material Due 3/22
Importance: High

Dear Colleagues:

With regard to the attached **green ticket** on updating the agency's Info Digest, please be reminded that any changes (***including charts, graphs, etc***)

need to be made to the existing Info Digest file by **noon tomorrow (Tuesday, March 22).** File Location is under Special Instructions on the EDATS page. Here's the liink:

http://portal.nrc.gov/edo/staff/CPI/Shared%20Documents/Forms.AllItems.aspx

Once all changes are completed, please notify William Usilton, Shannon King and me that they have been made in a full and accurate manner.

To date, ***we have received notification from Christian (ARP), Theresa (DSRA), and Denise McGovern (DE)***.

Please contact Shannon or me if you have any inquiries. Look forward to your notification tomorrow.

As always, many thanks. Regards, Bob.

From:	Rivera-Varona, Aida
To:	NRO Division Directors; NRO Deputy Division Directors; NRO TA; Sorogeris, Patricia; Dixon-Herrity, Jennifer; Johnson, Michael; Holahan, Gary
Cc:	Matthews, David; Madden, Patrick; Akstulewicz, Frank; Erwin, Kenneth; Schum, Constance; DNRLCAL Resource; DSERCAL Resource; Clark, Theresa; Shuaibi, Mohammed; Rosales-Cooper, Cindy; Karas, Rebecca; Bergman, Thomas; Lombard, Mark; Flanders, Scott; McGovern, Denise; Coffin, Stephanie; Ader, Charles; Segala, John; Bailey, Kenneth; lappins@comcast.net
Subject:	Program Meeting
Attachments:	Program Meeting Agenda 3-22-11.docx

When: Tuesday, March 22, 2011 2:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T-6A1

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

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

Attached is the agenda for tomorrow's program meeting.
Just a friendly reminder that the meeting tomorrow is for Division Directors and Deputies only.

Agenda:

2:00 – 4:00 pm - Pre-retreat Discussion for Session 2: Organizational Structure (T. Bergman)
This meeting is for SES (and actors) only.

Please see the HYPERLINK "http://epm.nrc.gov/Support/nro_prog_meeting/default.aspx" Program Meeting SharePoint site for agenda information.

Thanks!
Aida

AGENDA

SES Retreat Session 2 Discussion

March 22, 2011
2:00 p.m. – 4:00 p.m.
T-6A1

Attendees: **SES and invited others**

Please read: **Provided background material**

Purpose: **Discuss items related to retreat session 2, organizational model**

Outcome: **Define what is on and off the table for session 2**

Agreement and common understanding of decision criteria

Process:

2:00 p.m. – 2:10 p.m.	**Introduction** Session Leader Facilitator	 *Charlie Ader* *Ken Bailey*
2:10 p.m. – 2:20 p.m.	**Brainstorm** Add to List	 *All*
2:20 p.m. – 3:20 p.m.	**Discuss On/ Off the Table List**	*All*
3:20 p.m. – 3:40 p.m.	**Agree on Decision Criteria**	*All*
3:40 p.m. – 3:50 p.m.	**Next Steps**	*All*
3:50 p.m. – 4:00 p.m.	**Summary of Agreements Reached And Action Items**	

Notes:

From: Sandra Gonzalez
To: Flanders, Scott
Subject: Small Modular Reactors Event: Building a New SMR Industry
Date: Tuesday, March 22, 2011 6:06:44 PM

This unique, multi-national event will provide unparalleled insight into:

- Government support for SMR commercialization
- Commercialization of all leading SMR designs
- Military, utility and other customer perspectives
- Developing an SMR supply chain
- Finance and investment outlook

Come hear the perspectives of manufacturers, financiers, customers and reactor developers!

Three Great Events in One:

Advanced SMR Technology Symposium

Building the Value Chain for Commercializing Small Modular Reactors 2011

Licensing Small Modular Reactors Workshop

EVENT SCHEDULE
Symposium: Advanced SMR Technology
Monday, March 28, 2011 8:00 am- 5:00 pm

Summit: Building the Value Chain for Commercializing Small Modular Reactors 2011
Tuesday, March 29, 2011 7:00 am- 5:45 pm and
Wednesday, March 30, 2011 7:00 am- 4:00 pm

Workshop: Licensing Small Modular Reactors
Thursday, March 31, 2011 8:00 am- 5:00 pm

The "yes" button below will begin the registration process.

The "no" button will decline the invitation and discontinue further announcements regarding this event.

Where Almas Temple Club
1315 K Street, Washington, DC 20005

FEE View Tuition Details

More Event Information

View Event Agenda

Please respond by clicking one of the buttons below

Having trouble with the link? Simply copy and paste the entire address listed below into your web browser:
http://guest.cvent.com/d/HbBCyczwYkm3kusccTF1pg/znlh/P1/1Q?

If you no longer want to receive emails from Infocast please click the link below.
Opt-Out

From: Dell Federal Government
To: Flanders, Scott
Subject: Don"t forget to stop by Dell"s booth at GovSec
Date: Tuesday, March 22, 2011 10:21:52 AM

Click here if you are having difficulty viewing this email.

Get the technology solutions you need at GovSec to fulfill your missions

Join us at the Government Security Conference and Exposition, the foremost authority on securing the nation, on March 29-31st in Washington D.C.

Dell will be at booth #1015 to demonstrate our latest solutions for DISCC, Digital Forensics, Rugged Mobility, mobile phones, new Latitudes/Laptops, Enterprise products and services.

Please join us on March 30th at 2:15-2:50pm for Dell's speaker on Cybersecurity in the Cyber Theater.

Discover how Dell technology and tailored solutions can help you perform your work more efficiently than ever. We hope to see you there.

Government Security Conference & Expo
March 29-31, 2011
Washington, D.C.

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From: PKWARE, Inc.
To: Flanders, Scott
Subject: Ensure FIPS Compliance
Date: Tuesday, March 22, 2011 7:46:41 AM

Dear Scott,

Security is an inherent part of information technology.

With minimal tolerance for data compromise, it is critical for government agencies to ensure data is protected at all times, even when it travels outside your organization.

The PKWARE Solution is the *only* system that provides complete data container portability for managing, moving, storing and securing data across the extended enterprise, internally and externally, from the mainframe to the desktop and into the Cloud.

Download the whitepaper, Secure Government Computing, to learn about the standards for data encryption as outlined by the NIST and learn how to determine if your agency is in compliance with FIPS 140-2.

As a benefit to you, the PKWARE Solution meets data protection standards for Federal Government computing, addressing FIPS 140, FIPS 201 and FDCC requirements. Ensure your software is in FIPS compliance and conforming to best practices.

Sincerely,

The PKWARE Team

www.pkware.com

If you no longer wish to receive these emails, click on the following link: Unsubscribe

From: Ragan Communications
To: Flanders, Scott
Subject: Transform your work atmosphere with better communication
Date: Tuesday, March 22, 2011 12:01:41 PM

Tweet, talk or text: How to effectively communicate in a high-tech world

Wednesday, April 20, 2011 • 2 - 3:15 p.m. Central Standard Time

- **Is your inbox full of one-word e-mails?**
- **Do people call you for something that can be quickly answered in a text?**
- **Can you use advice on the do's and don'ts of social networking on the job?**

Manage Better and Senior Facilitator for BRODY Professional Development Amy Glass have teamed up to bring you the webinar to improve your workplace interaction and get your point across.

Good communication gets things done at work! Join us for this event on Wednesday, April 20, 2011 at 2:00 p.m. CST and you will:

- Understand your own communication style
- Discover how to get better results from e-mail
- Explore the nuances of social networking "netiquette"
- Rediscover the etiquette of, and best uses for, phone, email and texting
- And more!

Register Today!

REGISTER NOW

Phone registrations, please call 800.493.4867 and mention code **TEPN.**

Unable to attend the webinar on April 20, 2011 at 2 p.m. Central?

No problem!

Order a multimedia CD recording of this event. **(The CD includes all presentation handouts.)**

What's a manageBetter.biz webinar?

A manageBetter.biz webinar is a 75-minute real-time audio presentation (presented over the phone) combined with a simultaneous, visual presentation on the web. The 60-minute presentation is followed by a 15-minute live Q&A with the speaker.

Remove yourself from future email here

Ragan Communications, Inc. | 111 E. Wacker Dr. | Ste. 500 | Chicago, IL 60601 | USA |
cservice@ragan.com
This message was sent to scf@nrc.gov

From: ODriscoll, James
Sent: Tuesday, March 22, 2011 8:19 PM
To: Jackson, Christopher; Carneal, Jason; McKirgan, John
Subject: RE: Reference to RG in Section 6.4 - followup action from Chapter Day.

Jason/Chris,
I'm ok with this change.
Jim

From: Jackson, Christopher
Sent: Monday, March 21, 2011 11:49 AM
To: Carneal, Jason; ODriscoll, James; McKirgan, John
Subject: RE: Reference to RG in Section 6.4 - followup action from Chapter Day.

Jason,

I have reviewed the guidance and I offer the following revision. Can you see if Bob agrees?

CJ

From: Carneal, Jason
Sent: Monday, March 21, 2011 2:33 PM
To: ODriscoll, James; Jackson, Christopher
Subject: Reference to RG in Section 6.4 - followup action from Chapter Day.

Chris and Jim:

The one follow-on for SPCV from Friday's Chapter Day was providing the correct RG to reference in the following paragraph:

Type of Pressurization System and CRE Zone

The staff reviewed the U.S. EPR design against NUREG-0800, Acceptance Criterion 3, "Pressurization Systems," and related regulatory guidance.

(b)(5)

(b)(5)

Have we determined which RG to reference here? Once we add this, we are done with the SPCV portion of Section 6.4.

Michelle will be giving input on her two actions from the meeting sometime today.

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

-----Original Message-----
From: Ashley, Clinton
Sent: Tuesday, March 22, 2011 6:47 PM
To: Jackson, Christopher
Subject: RE: US APWR and debris allocation

See attached

-----Original Message-----
From: Jackson, Christopher
Sent: Tuesday, March 22, 2011 11:39 AM
To: Ashley, Clinton
Subject: RE: US APWR and debris allocation

Do know if we have a firm time and date for the meeting?

-----Original Message-----
From: Ashley, Clinton
Sent: Tuesday, March 22, 2011 11:14 AM
To: Jackson, Christopher
Subject: RE: US APWR and debris allocation

Chris thanks for the feedback.

I agree with adding the clarifying statement.
I also appreciate the discussion on defense in depth and expectations regarding the overall plant versus SSC's.

Clint

-----Original Message-----
From: Jackson, Christopher
Sent: Tuesday, March 22, 2011 4:22 AM
To: Ashley, Clinton
Subject: RE: US APWR and debris allocation

Great summary and not too lengthy.

Only a few minor comments.

(b)(5)

CJ

-----Original Message-----
From: Ashley, Clinton
Sent: Monday, March 21, 2011 8:07 PM
To: Jackson, Christopher
Subject: US APWR and debris allocation

Chris, this is a lengthy email....I apologize in advance. I attempt to argue that MHIs 70% debris allocation to one of two operable sump strainers is not sufficiently justified. Pease take a critical look and let me know what you think. This argument would also be used to support the upcoming public meeting.

At the end, I propose to address the below discussion in an RAI as follows:

(b)(5)

Clint
x2016

(b)(5)

(b)(5)

(b)(5)

I propose to address the above discussion in an RAI as follows:

(b)(5)

From:	NRO_ARP_ARB1_2_Cal Resource
To:	RES_DSA_Calendar Resource; Reckley, William; Mayfield, Michael; Uhle, Jennifer; Gibson, Kathy; Valentin, Andrea; Rubin, Stuart; Zaki, Tarek; Basu, Sudhamay; Carlson, Donald; Scott, Michael; NRO_Division_Directors; Norato, Michael; Coffin, Stephanie; Magruder, Stewart; Ray, Neil
Cc:	Kelly, Joseph; Coe, Doug; Lui, Christiana; Case, Michael; Richards, Stuart; Gavrilas, Mirela; Coyne, Kevin; Bergman, Thomas
Subject:	Canceled: Weekly RES/NRO Advanced Reactor Meeting/Conference Call
Importance:	High

When: Wednesday, March 23, 2011 3:30 PM-4:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T7A01

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

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

In view of conflicting schedules and the NRO All-Hands meeting this Wed. we are cancelling this week's meeting.

Good afternoon,

All NRO Staff wishing to attend this video-teleconference with RES, please be advised that this week's meeting will be held in T7A01. I have invited all Division Directors to attend if they would like. Please forward to any others who may be interested.

From: ACAA Resource

To: Abdullahi, Zena; Abraham, Susan; Adkison, Carol; Agneu, Terry; Albert, Ronald; Alexander, Cheryl; Allen, Linda; Anderson, Shaun; Archer, Randy; Armstrong, Garry; Augustus, Reginald; Ayres, Annette; Bailey, Kenneth; Balarabe, Sarah; Barnes, Anthony; Barnes, Robin; Barnett, Nina; Beckford, Kaydian; Bell, Marvin; Bell, Ralph; Bellinger, Alesha; Benton, Laray; Bethea, Rhonda; Bloomer, Tamara; Blount, Tom; Bolding, Virginia; BowdenBerry, Elva; Bowman, Cassandra; Boyd, Lena; Boyer, Rachel; Bright, Richard; Brown, Eva; Brown, Milton; Brown, Terrise; Brown, Theron; Brydson, Ava; Bumpass, Sheila; Burkhalter, Cornelia; Burnette, Danielle; Burton, Tasheena; Burton, William; Bush, Tyesha; Bush-Goddard, Stephanie; Butler, Rhonda; Byrd, Calvin; Campbell, Lillie; Cannady, Ashley; Carter, Ted; Champ, Billie; Champion, Bryan; Champion, Tanya; Claggett, Lauren; Clark, Phyllis; Cloyd, SherVerne; Coates, Anissa; Coates, Carlotta; Coleman, Nicole; Collins, Chiquita; Compton, Makeeka; Conti, Tony; Cook, Bonita; Cooper, Kiona; Cooper, LaToya; Cornelius, David; Cotton, Karen; Courts, Tonya; Crawford, Carrie; Cross-Prather, Peggy; Crutchfield, Shirley; Cunanan, Davida; Currie, Bruce; Curry, Jeanette; Davis, Chon; Davis, Gwendolyn; Davis, Mildred; DeBose, Michelle; Deeds, Erin; Dekle, Cynthia; Donnell, Tremaine; Dorfman, Joel; Dorm, Paula; Dorsey, Cynthia; Downey, Steven; Dozier, Tamsen; DuBose, Andree; Duvigneaud, Dylanne; Edmonds, Shavon; Edwards, Denise; Ellis, Twana; Etheridge, Peggy; Evans, Jonathan; Fetter, Allen; Fields, Leslie; Fields, Tiffany; Flanders, Scott; Fleming, Kreslyon; Fletcher, Michele; Floyd, Daphene; Foggie, Kirk; Ford, Tanya; Fortune Grasty, Tojuana; Franklin, Carmen; Garland, Stephanie; Gorham, Tajuan; Govan, Tekia; Graham, Thorne; Graves, Herman; Gray, Anita; Green, Matthew; Green, Rodneshia; Greene, LaTosha; Greene, Natasha; GreenJr, Noble; Grimes, Charemagne; Hardy, Ray; Harris, Natasha; Hatchett, Gregory; Hawkins, Sarenee; Hayes, Mahdi; Heath, Maurice; Heck, James; Hemphill, Khadijah; Henderson, Mable; Hester, Janice; Hicks, Angelisa; Higginbotham, Tina; Hill, Kendra; Holmes, Beverly; Holston, Coleda; Hood, Tanya; Hopkins, Ogbonna; Horne, Ronnie; Isaac, Patrick; Jackson, Deborah; Jackson, Kia; Jackson, Rahsean; Jacobs-Baynard, Elizabeth; Jamerson, Kellee; Jenifer, Phyllis; Jenkins, Barbara; Jenkins, Ronaldo; Jessie, Janelle; Johnson, Dante; Johnson, Joanne; Johnson, Kevin; Johnson, Michael; Johnson, Sandra; Jones, Andrea; Jones, Henry; Jones, Kevin; Jones, Kimberly; Jones, Rosalyn; Jones, Wanda; Jordan, Natreon; Kelley, Corenthis; Khanna, Meena; King, Beverly; King, Ikeda; Kinney, Penelope; Knox-Davin, Edna; Larkins, John; Lee, Brian; Lewis, Antoinette; Lewis, Doris; Lindsay, Haile; Longmire, Pamela; Mahdi, Deborah; Majeed, Fajr; Marshall, Michael; Marshall, Shawn; Martin, Kamishan; Martin, Shannan; Maupin, Cardelia; McCrary, Cheryl; McIntosh, Angela; McKelvin, Sheila; McKenzie, Linda; McKoy Moore, Larniece; Mensah, Tanya; Miles, Brenda; Mitchell, Linda; Mitchell, Reggie; Montgomery, Shandeth; Moon, Tarsha; Moore, Johari; Moore, Tiffany; Morgan, Nadiyah; MorganButler, Kimyata; Morton, Wendell; Moses, Kay; Mott, Kenneth; Murdock, Darrell; Murphy, Jerome; Negrin, Darlene; Nesmith, Sandra; Newell, Brian; Newell, Karenina; Newman, Tonya; Ngbea, Evangeline; Obodoako, Aloysius; Opara, Stella; Ortiz, Laverne; Paige, Jason; Penny, Melissa; Perkins, Leslie; Perry, Jamila; Peterson, Gordon; Powell, Marlon; Powell, Tamara; Pulliam, Timothy; Purdie, Deonna; Ray, Neil; Redden, Adrienne; Rice, Ayanna; Richardson, Jerry; Ricketts, Paul; Roach, Edward; Robbins, Emily; Roberts, Beverly; Roberts, Darrell; Robinson, Debra; Robinson, Edward; Robinson, Gary; Robinson, Rasmey; Rodgers, Mary; Ross, Robin; Rowley, Jonathan; Sahle, Solomon; Sanchez, Chanel; Sanders, Serita; Scales, Kerby; Simms, Dannette; Simms, Sophonia; Sims, Carolyn; Singletary, Melana; Smith, Cathy; Smith, Shawn; Smith, Tuwanda; Smyre-Saleem, Celeste; Somerville, Glenda; Somerville, Joseph; Spaulding, Deirdre; Stanfield, Richard; Stevens, Mackenzie; Stewart, Fredonia; Stewart, Sharon; Stokes, Tracey; Stubbs, Angelo; Suber, Gregory; Sutton, Mallecia; Sweat, Tarico; Sykes, Marvin; Tadesse, Rebecca; Talley, Sandra; Tate, Travis; Taylor, Sherrie; Terry, Tomeka; Thaggard, Mark; Thomas, Brian; Thomas, Loretta; Thomas, Vaughn; Thompson, Jacqueline; Thurston, Carl; Thweatt (ADM), JoAnne; Tobe, Celestia; Trowell, Tina; Valentin, Andrea; Wade, Tony; Walker, Dwight; Walker, Harold; Walker, Jacqwan; Walker-Smith, Antoinette; Walls, Carol; Warren, Brenett; Washington, Dorothea; Way, Ralph; West, Garmon; Wharton, Raynard; Wheatley, Wanda; White, Duane; White, Jason; Whitt, Emarsha; Wilkins, Lynnea; Williams, Anthony; Williams, Barbara; Williams, Evelyn; Williams, Gerald; Williams, Kevin; Williams, Monique; Williams-Johnson, Patrice; Williamson, Alicia; Wimbush, Andrea; Yerokun, Jimi; Young, Mitzi; Zuberi, Sardar

Subject: ACAA All-Employees Meeting

Attachments: Agenda032311.docx

When: Wednesday, March 23, 2011 12:00 PM-1:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T-7A1

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

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

~REMINDER~

The next ACAA All-Employees meeting is scheduled for Wednesday, March 23rd from 12 noon – 1:00 pm in T-7A1. The meeting agenda is attached and you are welcome to bring your lunch. We hope you are able to attend!

NEW LOCATION
The ACAA All-Employees meetings are now being held in room T-7A1.

ACAA All-Employees Meeting
Wednesday, March 23, 2011
12:00pm – 1:00pm
Room T-7A1
(This meeting will be video-conferenced to the regional offices)

AGENDA

I. **Welcome/Introduction**

II. **Presentation – *"Resume Writing"***
Presenter: Dafna Silberfeld, HR Specialist

III. **Staff Comments/Concerns/Feedback**

IV. **Upcoming Events & Reminders**

March (National Women's History Month)

25	Maryland Day
29-30	Leadership Orientation Course, Office of Human Resources, Karmen Baretich
30	ACAA Happy Hour/Celebration for Debbie Jackson [Dave and Busters @ 5:30pm – 8:00pm]

April (Records and Information Management Month)

1	April Fool's Day
15	Deadline for filing income taxes
	Deadline for deposits for EWRA European Cruise
17	Palm Sunday
19	Passover
	Patriots' Day
20	Quad Cities Exercise
22	Good Friday
	Earth Day
24	Easter

V. **SBCR Remarks**

[If you know of someone not receiving emails from ACAA and would like to, please email us at ACAA.Resource@nrc.gov to have their name added to our distribution list.]

(This is our recurring bridge line and passcode for use throughout the year.)
Bridge Line: 1-800-619-8711
Passcode: (b)(6)

From: Williams, Donna on behalf of Johnson, Michael
To: NRO Distribution
Subject: NRO All Hands meeting

When: Wednesday, March 23, 2011 2:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Marriott North Bethesda

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

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Agenda:

Mike Johnson remarks

Overview of significant technical issues
Digital I&C - DE
Modifying the Risk Informed Regulatory Guidance for New Reactors – DSRA
Environmental Issues - DSER

Commissioner Apostolakis remarks

EEO Advisory Committee – APAAC

From:	NRO_ARP_ARB1_2_Cal Resource
To:	RES_DSA_Calendar Resource; Reckley, William; Mayfield, Michael; Uhle, Jennifer; Gibson, Kathy; Valentin, Andrea; Rubin, Stuart; Zaki, Tarek; Basu, Sudhamay; Carlson, Donald; Scott, Michael; NRO_Division_Directors; Norato, Michael; Coffin, Stephanie; Magruder, Stewart; Ray, Neil
Cc:	Kelly, Joseph; Coe, Doug; Lui, Christiana; Case, Michael; Richards, Stuart; Gavrilas, Mirela; Coyne, Kevin; Bergman, Thomas
Subject:	Weekly RES/NRO Advanced Reactor Meeting/Conference Call

When: Wednesday, March 23, 2011 3:30 PM-4:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: T7A01

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

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

In view of conflicting schedules and the NRO All-Hands meeting this Wed. we are cancelling this week's meeting.

Good afternoon,

All NRO Staff wishing to attend this video-teleconference with RES, please be advised that this week's meeting will be held in T7A01. I have invited all Division Directors to attend if they would like. Please forward to any others who may be interested.

From: Cook, Christopher
To: Flanders, Scott; Munson, Clifford; Chokshi, Nilesh
Subject: FYI: Weijun to present at today"s All hands
Date: Wednesday, March 23, 2011 8:21:26 AM

For awareness. Weijun has been asked by DCIP to talk thru a 3 minute video showing a time-lapse images/video of the Vogtle excavation. Weijun and I got the request yesterday afternoon.

Chris

From: Beardsley, James
Sent: Wednesday, March 23, 2011 8:03 AM
To: Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Weijun,

I think the files it too big, but I have the DVD sitting on my desk.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Wang, Weijun
Sent: Wednesday, March 23, 2011 7:17 AM
To: Beardsley, James
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Jim:

Yes, I can explain what was and is happening since the beginning of the excavation at the Vogtle site. It will help if you could forward me the video (if the file is too big, then I can go to your office to get the DVD). Thanks.

Weijun
(301)415-1175

From: Beardsley, James
Sent: Tuesday, March 22, 2011 1:00 PM
To: Beardsley, James; Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

I have a copy of the DVD if you want to take a look.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Beardsley, James
Sent: Tuesday, March 22, 2011 12:33 PM
To: Wang, Weijun
Cc: Cook, Christopher
Subject: RE: All hands meeting - request for DCIP help

Weijan,

As I stated in the email below, Mike Johnson would like to show a time lapsed video of the Vogtle construction site at the All Hands Meeting tomorrow. It starts with the clearing of the trees and goes through the excavation and refilling of the safety related areas. My thought is that I would introduce the video and describe the initial portion. When it gets into the excavation and then the safety fill of the construction areas, you could take over and explain what is happening. The video runs around three minutes.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Cook, Christopher
Sent: Tuesday, March 22, 2011 12:05 PM
To: Beardsley, James; Wang, Weijun
Cc: Karas, Rebecca
Subject: RE: All hands meeting - request for DCIP help

Yes. Jim, Weijun is the right person to coordinate with.

Chris

From: Karas, Rebecca
Sent: Tuesday, March 22, 2011 11:58 AM
To: Beardsley, James
Cc: Cook, Christopher; Wang, Weijun
Subject: RE: All hands meeting - request for DCIP help

I am thinking that would be Weijun. Please coordinate with Chris Cook.

Rebecca Karas, Chief

Geosciences and Geotechnical Engineering Branch 1
Division of Site and Environmental Reviews
Office of New Reactors
U.S. Nuclear Regulatory Commission
Phone: 301-415-7533
Fax: 301-415-5397

From: Beardsley, James
Sent: Monday, March 21, 2011 8:18 AM
To: Karas, Rebecca
Subject: FW: All hands meeting - request for DCIP help

Rebecca,

I have a favor to ask. In the email below, the NRO Front office asked DCIP to explain a DVD that Vogtle gave the EDO at the All Hands This week. The DVD is a time delayed video for the Vogtle construction site over the past couple years. I can introduce the video, but most of the work they have done is digging and then filling the "holes." I was hoping that one of your folks could explain that part of the process at the All Hands. Aida Rivera has the DVD if you would like to take a look.

Jim Beardsley
Chief, Construction Inspection Program Branch (CIPB)
U.S. Nuclear Regulatory Commission
Office of New Reactors
Division of Construction, Inspection, & Operational Programs
Office: T-7D49
MS: T-7D24
W: (301) 415-5998
C: (b)(6)

From: Rivera-Varona, Aida
Sent: Friday, March 11, 2011 8:49 AM
To: Williams, Donna
Cc: Tappert, John; Beardsley, James
Subject: RE: All hands meeting - request for DCIP help

Donna,

Yes. We can definitely support. If you can provide me with the copy of the video, we will start working on it.

Thanks!
Aida

From: Williams, Donna
Sent: Friday, March 11, 2011 8:37 AM
To: Rivera-Varona, Aida
Cc: Tappert, John
Subject: All hands meeting - request for DCIP help

Aida

During a recent trip to Vogtle, Nathan Sanfilipo was given a dvd of timelapse photos of the Vogtle site construction. Mike would like to show it at the March 23 all hands meeting, to give staff who won't get a chance to get to the site, an understanding of what is happening there. The video is about 4 minutes long. It would be very helpful to have someone who is familiar with the construction activities narrate the video to explain what is happening and point out structures, etc. in the video (i.e., how far they are digging down, explain the backfill process, point out the modular assembly buildings, etc.) . I will give you the dvd ahead of time so that person can view it and prepare some remarks. We plan to do this at the end of the meeting (around 3:55).

Please let me know who is available.
Thanks
Donna

From: Chokshi, Nilesh
To: Raione, Richard
Cc: Flanders, Scott
Subject: RE: Request for Thursday
Date: Wednesday, March 23, 2011 10:42:02 AM

That's fine, but appoint acting BC today and let affected people know.

From: Raione, Richard
Sent: Wednesday, March 23, 2011 8:08 AM
To: Chokshi, Nilesh
Subject: Request for Thursday

Permission requested to be off tomorrow – I have appts.

Friday (b)(6)

Thank you.

Richard Raione, PG, CPG, CGWP
US NRC, Office of New Reactors
Chief, Hydrologic Engineering Branch
301-415-7190
cell: (b)(6)
fax: 301-415-5397
richard.raione@nrc.gov

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 11:28 AM
To: Hsii, Yi-Hsiung; McKirgan, John; Hayes(NRO), Michelle
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Gene,

Can you take a look at this sentence? It was in the ISL mark-up. Can you confirm it is OK?

CJ

(b)(5)

From: McKirgan, John
Sent: Monday, March 21, 2011 8:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris, Anne-Marie,

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff.

Thanks,

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's **specific comments/questions** 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg
Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

Specific Comments/Questions

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From:	Coffin, Stephanie
To:	Flanders, Scott
Cc:	Mayfield, Michael
Subject:	RE: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Date:	Wednesday, March 23, 2011 11:20:27 AM

It doesn't need to be someone senior meaning SES. I meant senior staff or branch chief would be fine. Sorry if misunderstanding.

From: Flanders, Scott
Sent: Wednesday, March 23, 2011 11:19 AM
To: Coffin, Stephanie
Cc: Mayfield, Michael
Subject: RE: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.

Stephaine, this conflicts with budget meeting we have with Mike. It is unlikely that we will support this meeting, but I will get back to you with a fianl answer later today.

Scott

-----Original Appointment-----
From: Karas, Rebecca **On Behalf Of** Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:44 AM
To: Flanders, Scott; Cook, Christopher
Subject: FW: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Nilesh and I talked. Stephanie called and said someone senior from DSER really needs to go to this. I can discuss with you. Cliff is WAH that day, and Nilesh is out.

-----Original Appointment-----
From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:26 AM
To: Coffin, Stephanie; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines

available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's

possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From: Chokshi, Nilesh
To: Flanders, Scott
Cc: Karas, Rebecca
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Date: Wednesday, March 23, 2011 10:47:25 AM
Importance: High

Scott,

We need to decide who is going to attend. Stephanie called Becky and has requested that it is very essential that we have a presence there.

Nilesh

From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:24 AM
To: Chokshi, Nilesh; Shuaibi, Mohammed; Tappert, John; Norato, Michael; Ray, Neil; Zaki, Tarek; Elkins, Scott; Gibson, Kathy; Donoghue, Joseph
Cc: DeMarco, Deborah
Subject: RE: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Importance: High

The meeting is ON! I apologize for the confusion.

Stephanie

-----Original Appointment-----
From: RobinsonII, Richard **On Behalf Of** Coffin, Stephanie
Sent: Wednesday, March 23, 2011 9:18 AM
To: NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

Due to issues with the original scheduler, this meeting is being resent. All information is the same from the previous.

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).

Where: NRO - TWFN - 07A-01

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

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

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines

available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's

possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From: Flanders, Scott
To: Matthews, David
Subject: Re: Bob and I are on for a 1 pm retreat mtg in the forum mtg room. EOM.
Date: Wednesday, March 23, 2011 12:11:10 PM

Ok, I may be a few mins late.
Scott

Sent from my NRC Blackberry
Scott Flanders
(b)(6)

From: Matthews, David
To: Flanders, Scott
Sent: Wed Mar 23 12:01:44 2011
Subject: Bob and I are on for a 1 pm retreat mtg in the forum mtg room. EOM.

From: Akstulewicz, Frank
To: Flanders, Scott
Subject: monthly report
Date: Wednesday, March 23, 2011 4:14:57 PM

Scott

We have the final version of the March monthly report ready to go to Michael. Needs to be there tomorrow. Are we waiting for input from DSER or can we send on.

From:	Chokshi, Nilesh
To:	Jones, Henry; Seber, Dogan; Wang, Weijun
Cc:	Flanders, Scott; Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject:	Kudos
Date:	Wednesday, March 23, 2011 4:57:57 PM

Great presentations! I have already received requests to have your presentations available to other staff members. Let's think about how we do that, given we have some plant-specific information.

From:	Lauron, Carolyn
To:	Snyder, Amy; Akstulewicz, Frank
Cc:	Flanders, Scott; Hatchett, Gregory; Dent, Kimberly; Dozier, Tamsen
Subject:	Coordination/Confirmation Requested: ACTION: G20110201 - Waste Management and Environmental Reviews Submitted on North Anna 3 Project
Date:	Wednesday, March 23, 2011 5:24:34 PM
Attachments:	G20110201.pdf
Importance:	High

Hi –

Attached is the GT request that is **due 4/8** for MJ to review/sign-out.

I think DSER and DNRL need to coordinate a response since the letter also references our review of the design in the future (2013) based on an article attached.

Perhaps you have already responded to a similar letter (maybe from the same concerned person) and we could look at ensuring consistency in our responses.

Please let me know.

Thanks,
Carolyn
2736

From: RidsNroMailCenter Resource
Sent: Wednesday, March 23, 2011 5:16 PM
To: Dent, Kimberly
Cc: Lauron, Carolyn; Sweeney, Beverly; Correa, Yessie; Berry, Lee
Subject: FW: ACTION: G20110201
Importance: High

RE: G20110201/LTR-11-0135/EDATS: SECY-2011-0159 – Water Management and Environmental Reviews Submitted on North Anna 3 Project

Attached is the incoming action for the above subject green ticket. The ADAMS version (ML#) will be sent after DPC processes.

NOTE: The 'Routing' list on the first page of the action (right side) should read Sanfilippo instead of Wittick. Please add Nathan Sanfilippo to the distribution list on the letter.

EDATS Subtask 3432-1
Electronic Distribution Only

Thank you,
NRO Correspondence Team
Anissa

EDO Principal Correspondence Control

FROM: DUE: 04/14/11 EDO CONTROL: G20110201
DOC DT: 03/15/11
FINAL REPLY:

Harry Ruth
Friends of Lake Anna

TO:

Chairman Jaczko

FOR SIGNATURE OF : ** PRI ** CRC NO: 11-0135

Johnson

DESC:

Water Management and Environmental Reviews
Submitted on North Anna 3 Project
(EDATS: SECY-2011-0159)

ROUTING:

Borchardt
Weber
Virgilio
Ash
Muessle
OGC/GC
Leeds, NRR
McCree, RII
Wittick, OEDO

DATE: 03/23/11

ASSIGNED TO: CONTACT:

NRO Johnson

SPECIAL INSTRUCTIONS OR REMARKS:

EDATS Number: SECY-2011-0159 **Source:** SECY

General Information

Assigned To: NRO **OEDO Due Date:** 4/14/2011 11:00 PM

Other Assignees: **SECY Due Date:** 4/14/2011 11:00 PM

Subject: Water Management and Environmental Reviews Submitted on North Anna 3 Project

Description:

CC Routing: RegionII

ADAMS Accession Numbers - Incoming: NONE **Response/Package:** NONE

Other Information

Cross Reference Number: G20110201, LTR-11-0135 **Staff Initiated:** NO

Related Task: **Recurring Item:** NO

File Routing: EDATS **Agency Lesson Learned:** NO

OEDO Monthly Report Item: NO

Process Information

Action Type: Letter **Priority:** Medium

Sensitivity: None

Signature Level: NRO **Urgency:** NO

Approval Level: No Approval Required

OEDO Concurrence: NO

OCM Concurrence: NO

OCA Concurrence: NO

Special Instructions:

Document Information

Originator Name: Harry Ruth **Date of Incoming:** 3/12/2011

Originating Organization: Friends of Lake Anna **Document Received by SECY Date:** 3/23/2011

Addressee: Chairman Jaczko **Date Response Requested by Originator:** NONE

Incoming Task Received: Letter

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

Date Printed: Mar 23, 2011 11:20

PAPER NUMBER:	LTR-11-0135	**LOGGING DATE:**	03/21/2011
ACTION OFFICE:	EDO		
AUTHOR:	Harry Ruth		
AFFILIATION:	VA		
ADDRESSEE:	Gregory Jaczko		
SUBJECT:	Request North Anna 3 reviews be haulted		
ACTION:	Direct Reply		
DISTRIBUTION:	Chairman, Comrs, SECY to Ack		
LETTER DATE:	03/12/2011		
ACKNOWLEDGED	No		
SPECIAL HANDLING:			
NOTES:			
FILE LOCATION:	ADAMS		
DATE DUE:	04/14/2011	**DATE SIGNED:**	

EDO --G20110201

Joosten, Sandy

From: Harry Ruth [HC.RUTH@LOUISA.NET]
Sent: Saturday, March 12, 2011 12:59 PM
To: CHAIRMAN Resource
Subject: Fw: FOLA - Request North Anna 3 reviews be haulted

----- Original Message -----
From: Harry Ruth
To: Senator R. Edward Houck ; Senator Charles Colgan-2 ; Senator Charles Colgan ; Gregory Jaczko (NRC Chairman) ; David Kaiser (NOAA)
Cc: Thomas Faha (VDEQ - No Va Dir) ; Will Frazee ; Will & Aileen Frazee (Jerdone Is) ; Walter Michalski ; Tersh & Jean Norton ; Steve (Ski) & Cheryl Monoski (Both Waters) ; Steve & Doris McGuire ; Richard Morrow ; Rich Kunz(Covenant Cove) ; Paul Schoenhard ; Linda Probst (Pine Harbor) ; Kirt Obeck (Busbees) ; Ken Remmers (work) ; Ken Remmers ; John & Tessie Fugett (Busbees) ; Jim Burdge ; Helen & Bruce McCotter (Red Hat) ; George & Gerry Heino ; Gary Muller ; Gary & Linda Bullis ; Fred & Cara Bitzer > ; Frank Jenkins ; Duane Redic ; Dennis Schaible ; Dave & Terry Conn ; Dan Baker (Work-Busbees) ; Dan & Leslie Baker (Lot 1 - Ruth Est) ; Dan & Fran Verjinski ; Chuck Grutzius (Covenant Cove) ; Bob & Jo Richards ; Barbara Crawford (Cuckoos Nest) ; Michael Ireland (Contrary Forest) ; Jack Higgins(Plum Tree) ; Dan Byers (LCBS -Jackson) ; Robert Dube (Louisa Administrator) ; Willie Gentry (LCBS - CD) ; Director David Paylor (VDEQ) ; Richard Weeks (Dep-VDEQ) ; Tamsen Dozier (NRC Environmental) ; Ellie Irons (VDEQ) ; Sarah Marsala (VDEQ - VWP) ; John Kuriawa (NOAA)
Sent: Thursday, March 10, 2011 12:27 PM
Subject: FOLA - Request North Anna 3 reviews be haulted

10 Mar 2011

To: NRC Chairman, Gregory Jaczko
Senator Charles Colgan
Senator R. Edward Houck
DEQ Director , David Paylor
NOAA - David Kaiser

Info Tamsen Dozier (NRC Environmental)
Ellie Irons (Va. Office of Environmental Impact Review) the Coastal Zone Management)
Sarah Marsala (VDEQ - Water Permits)

Reference: Water Management and Environmental Reviews previously submitted on the North Anna 3 project.

Dear Chairman, Senators and Director,

Based on the below article, it appears that the NRC Environmental, OEIR Coastal Zone Management Office and the VDEQ Water Permits
and associated Environmental Reviews currently being processed by the NRC and Virginia DEQ about a proposed 3rd nuclear reactor
at North Anna is entirely premature. You are currently soliciting comments from the public and local governments for a design that is
still not approved. This is the time for all to seriously look at the design and consider changes that will reduce or eliminate the additional of up to 24 million gallons a day of consumptive water use with the proposed 3rd reactor by using more dry cooling before construction begins
in a Lake that has over 3 million annual recreational users. 2011 technology should be used for reducing water use in a lake that
fed by a very small watershed, not a free flowing river. The technology should also incorporate the latest controls for releasing water out
of the lake and also at Dike 3 for maintaining design water levels in both the main reservoir and the cooling lagoons.

If the NRC is not going to review the design of the 3rd reactor until 2013 (see below article), how can the public or local governments make intelligent

comments today (2011) on a design that is not been approved, nor can the public or local governments anticipate what all of the environmental
or other impacts that they wish to comment on until it is approved..

This current process appears to be more absurd, when the permits or certifications that you are currently soliciting comments for, could be certified or approved
in 2011 and the *consistency certification would be good for a lifetime*, while the water permit(s) *would be good for 15 years* for a design that still has not been
approved and will not be for another 2 or 3 years, if at all. If the design is not approved or is modified in anyway following the granting of the consistency
certification or the water permits, ***the public will have no future recourse and Dominion will have valid permits and a consistency certification.***

The timing of the current federal and state processes for the coastal zone certifications and water withdrawal permits for the North Anna 3 project
definitely has the cart before the horse. Likewise some of the NRC Environmental Reviews do likewise.

The public was requested/instructed to comment on a construction water withdrawal permit by 4 Mar 2011 and a Coastal Zone Consistency Certification
by 18 Mar 2011.

We request that the entire process be reviewed and updated at both the Federal Level (NRC and NOAA) and at the state level (VDEQ & State Water Control Board).
It appears that the current process is not only wasting our public servants time at the NRC and VDEQ, (but more importantly during a recession with millions of
people out of work), wasting the taxpayers money, the publics' time and a federal budget that appears to be out of control.

Please note that the Friends of Lake Anna is not anti-nuclear, nor do we have "not in my backyard" sentiments. but do support a wise and safe use of nuclear energy. Our goal is simply to protect Lake Anna for it approximately 3,000,000 annual users, together with its local businesses and insure compliance with the law.
We do support the North Anna 3rd unit project, but want to insure that all environmental concerns are addressed in a responsible manner.

Therefore based on the above, (1) Please hault the current consistency certifications, water permit processing and associated environmental reviews for the North Anna 3 reactor until the NRC design review is completed: and (2) Also change and update the current laws/regulations as appropriate.

We will look forward to hearing from you soonest on the these requests.

Sincerely,

Harry Ruth
for the Friends of Lake Anna
C/O 230 Heather Drive, Bumpass, Va. 23024
Phone 540-872-3632

Acronym List:
DEQ Department of Environmental Quality
OEIR Office of Environmental Impact Review (VDEQ)
NOAA - National Oceanic and Atmospheric Administration
NRC Nuclear Regulatory Commission
VDEQ Virginia Dept of Environmental Quality

Reactor Design Changes Delay New Units at North Anna and Comanche Peak Nuclear Plants

Nuclear Power Industry News

Nuclear Power Industry News

Nuclear Power Plant News - Covering nuclear energy, suppliers, technology, equipment, and new plant construction

Reactor Design Changes Delay New Units at North Anna and Comanche Peak Nuclear Plants

Nuclear Street News Team
Wed, Mar 9 2011 5:55 AM

- Comments 0

The Nuclear Regulatory Commission has indicated changes to the design of Mitsubishi's Advanced Pressurized Water Reactor will delay expansions at two nuclear plants, one for 18 months and the other for two years.

Luminant sought licensing for two new 1700 megawatt APWRs at its Comanche Peak site in Texas. Dominion, after starting the licensing process with plans to install a GE-Hitachi reactor, also decided last year to install a new APWR at its North Anna site in Virginia. While the NRC approved Mitsubishi's APWR design in 2008, the company had made structural changes to the plans that NRC indicated will require another seismic analysis.

A Dominion spokesman told Platts news service that the design review for the Virginia project would be delayed until 2013.

Likewise, the NRC indicated the safety review for Luminant's project will be pushed back to 2013, a delay of 18 months.

The safety review of Mitsubishi's US APWR design was scheduled to be completed in September, but last month the NRC said it would be pushed back to May of 2013 because of deficiencies in the application regarding structural analysis and instrumentation design.

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(148.184.100.43) with Microsoft SMTP Server id 8.2.247.2; Sat, 12 Mar 2011
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with ESMTP id p2CHwqDS024273 for <Chairman.Resource@NRC.GOV>; Sat, 12 Mar
2011 12:58:52 -0500
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From: "Harry Ruth" <HC.RUTH@LOUISA.NET>
To: <Chairman.Resource@NRC.GOV>
Subject: Fw: FOLA - Request North Anna 3 reviews be haulted
Date: Sat, 12 Mar 2011 12:58:59 -0500
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X-MimeOLE: Produced By Microsoft MimeOLE V6.00.2900.5994
Return-Path: HC.RUTH@LOUISA.NET

From:	Hatchett, Gregory
To:	Flanders, Scott
Subject:	FYI:WPIT report 032311b.docx
Date:	Wednesday, March 23, 2011 3:32:15 PM
Attachments:	WPIT report 032311b.docx

WORK PROCESS IMPROVEMENT TEAM ASSESSMENT REPORT

MARCH 2011

Team Member	Signature	Date
Christian Araguas		
Jeff Ciocco		
Theresa Clark		
Samantha Crane		
Allen Fetter		
Gregory Hatchett		
Michelle Hayes		
Mark Lombard		
Michael McCoppin		
Edward Roach		
Thomas Scarbrough		
Suzanne Strosnider		

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Work Process Improvement Team Assessment Report
March 2011

EXECUTIVE SUMMARY

A coalition focused on improving use of Enterprise Project Management (EPM) within the Office of New Reactors (NRO) was initiated as a result of the Fall 2010 NRO management retreat. Members were selected based on recommendations from the management team to provide a cross-section of NRO functions and divisions. The team renamed itself the "Work Process Improvement Team," or WPIT, and defined its mission as determining the transformation needed to best utilize the current set of software tools to support planning and execution of NRO programs.

Through multiple meetings, WPIT developed a vision for EPM, as well as lower-level objectives supporting the vision. In the team's vision, EPM is NRO's accepted primary means to plan and execute licensing and non-licensing projects. EPM enables staff at all levels in the organization to understand and manage ongoing tasks and priorities, as well as to forecast work. EPM adds value as a user-friendly, consistent, flexible planning and scheduling tool populated with accurate, current data.

Following discussions with dozens of NRO staff and managers and analysis of a previous assessment of implementation, the team developed specific findings related to the elements of the vision for EPM. To improve on the situation described by the findings, WPIT recommends two high-level changes, as well as six near-term recommendations, four medium-term recommendations, and four long-term recommendations. These proposed changes and recommendations are listed below.

- **High-Level Changes**
  - EPM Program Manager
  - Steering Committee
- **Near-Term Recommendations (1 to 6 months)**
  - Establish and maintain a sense of urgency and importance in using EPM throughout NRO.
  - Define roles and responsibilities for all EPM users and owners.
  - Establish a project change control process with clearly defined roles, responsibilities, timeframes, and thresholds for approval.
  - Establish a software change control process that solicits user input, considers the impact of changes on users, and communicates the changes to users prior to implementation.
  - Develop a process, with criteria, to define the work captured in EPM.
  - Develop and provide quick reference guides.
- **Medium-Term Recommendations (6 to 12 months)**
  - Conduct benchmarking and identification of best practices in the public and private sectors.
  - Interact with users to identify and create role-specific reports.
  - Interact with users to identify needs and improvements for "My Tasks."
  - Establish and communicate NRO project priorities and link to EPM tasks.
- **Long-Term Recommendations (greater than 12 months)**
  - Standardize design center inputs, outputs, and work breakdown structure.
  - Identify additional training necessary to implement defined roles and responsibilities to obtain the maximum benefit from EPM.
  - Develop and issue additional guidance for users.
  - Provide a mechanism to perform "what-if" analyses on schedules.

OVERVIEW

MISSION

The Enterprise Project Management (EPM) Coalition was initiated as a result of the Fall 2010 Office of New Reactors (NRO) management retreat. This retreat discussed the following goals for the EPM Coalition:

- Define the "transformational change" needed to take EPM to the next level
- Develop the long term strategy and vision to effect the change
- Collect and investigate issues/concerns
- Separate truth from fiction
- Develop, implement, and celebrate short term wins
- Support the long term strategy

The Coalition members were selected based on recommendations from the management team to provide a cross-section of NRO functions and divisions. The first meeting acquainted members with the concept of change management and the role of the EPM Coalition. The Coalition picked a name, the Work Process Improvement Team (WPIT), to better describe the purpose of the team and its mission, which is to:

> ***Determine the transformation needed to best utilize the current set of software tools to support planning and execution of NRO programs.***

For the purposes of this effort, WPIT defined EPM as the core Microsoft application which contains the schedule (i.e., the input) for NRO program activities and provides reports (i.e., the output) for tracking of project tasks and resources. WPIT did not assess SharePoint, the electronic request for additional information (eRAI) system, or other applications or interfaces that may be included in the definition of "EPM."

APPROACH

WPIT defined three sub-groups to perform the following tasks:

1. Develop the WPIT mission
2. Review results of the "NRO EPM Self-Assessment" conducted in 2008 (see Appendix A) and other available data generated/gathered previously
3. Conduct a new survey of a selected group of NRO staff (see Appendix B)

WPIT held a one day retreat during which an exercise was conducted to define what EPM should look and feel like in the future based on the knowledge of the team members and a review of previous and current self-assessment and survey data. This exercise helped the team define the future vision and objectives of the tool in the "Vision and Objectives" section below. The team performed a gap analysis of the current state of EPM against the future vision and documented the results of this activity in the "Findings" section below. It is recognized that only a small number of activities or corrective actions can be the focus at one time to assure sustainability and effectiveness. Therefore, in the "Conclusions and Recommendations" section, WPIT proposes two high-level changes as well as near-term, medium-term, and long-term recommendations.

Note that the first and most important recommendations of the WPIT are to establish an EPM Program Manager position and a steering committee with sufficient independence, authority, and responsibility to oversee all major changes to EPM and assure that the tool is effective in meeting the needs of both the NRO program and EPM users. Many members of the WPIT are willing to serve as members of this steering committee if this recommendation is adopted. Additional individuals, with the capabilities and experience that could enhance the effectiveness of steering committee, should be identified to serve on the committee as well.

VISION AND OBJECTIVES

WPIT collectively developed a vision statement to define a strategic direction for EPM. This vision is designed to serve as a decision-making criterion: improvements recommended by the team are intended to support the vision.

> ***EPM is NRO's accepted primary means to plan and execute licensing and non-licensing projects. EPM enables staff at all levels in the organization to understand and manage ongoing tasks and priorities, as well as to forecast work. EPM adds value as a user-friendly, consistent, flexible planning and scheduling tool populated with accurate, current data.***

Based on this vision statement, the team developed specific objectives to support the vision. These objectives are outlined in Table 1.

Table 1. Vision and Objectives for EPM

Vision Element	Objectives
EPM Is Accepted	• EPM is accepted by all staff in NRO. • All staff understand and implement EPM roles and responsibilities including system use, data input, system maintenance and enhancements, soliciting and utilizing feedback, and reporting. • Users do not feel the need to develop or utilize tools outside of EPM because the data are accurate and they trust the information provided by EPM.
EPM Data Are of High Quality	• Data are input in a manner to keep it accurate and current. • Schedule changes are evaluated to determine the impact to other associated schedules (e.g., design certifications (DCs), reference combined licenses (RCOLs), and subsequent combined licenses (SCOLs)) and timely adjustments are made to each schedule as necessary. • Schedule changes are evaluated to identify and resolve resource conflicts. • The schedule change control process is timely and effective, and associated roles and responsibilities are understood by all users. • Consistent guidance is provided and used in determining project status (e.g., 30/60/90% task completion) for all project phases.
Staff Understand and Manage Ongoing Tasks and Priorities	• Technical reviewers and project managers are aware of and understand tasks and due dates assigned to them and use this information to plan their work activities. • Staff assigned to tasks either meet the due dates or provide early feedback on needed date or task changes. • Branch chiefs understand how to view work and due dates assigned to the branch and use this information to manage branch work (e.g., using reports to identify over- or under-allocations and future resource needs). • Project managers use available schedule and resource data to determine project status and make informed decisions to keep their projects on track. • Managers are able to view information regarding tasks assigned to their division or the office as a whole to identify significant risks or issues requiring management intervention in order to meet project or office goals. • EPM is able to display relative project priorities as defined by senior management.

Vision Element	Objectives
Staff Can Forecast Work	• EPM enables dynamic scheduling including re-forecasting task and due dates as changes are identified, and re-baselining schedules if needed. • EPM has the ability to perform "what-if" analyses. • EPM provides timely and accurate information regarding actual and future resource expenditures (including non-licensing work) sufficient for input to budget formulation. • A comprehensive historical performance trail is available for planning future projects, improving the task estimation and acquisition processes and providing a perspective on the quality, timeliness, and budget needs of the organization.
EPM Is User-Friendly	• System interfaces are role-based, defined with user input, and change infrequently. • Interfaces are customizable by users so that significant drilling down is not required to reach information that is frequently accessed. • Users receive timely feedback on requests for help or data/system changes. • Customer service points of contact are easily found and are responsive to users. • Guidance and user aids (e.g., quick reference guides for common tasks) are clear, easily found, and up-to-date. • Help buttons and tips that pop up when hovering over certain buttons or links are provided. • Access to various views and information can be done quickly and easily. • Users can access needed reports easily. • Electronic work flows are used for process deliverables.
EPM Is Consistent	• The look and feel of schedules for similar work are built consistently regarding task and subtask detail, titles, task durations, resource estimates, and expected deliverables.
EPM Is Flexible	• EPM supports the needs of multiple user roles (e.g., branch chiefs, managers, technical reviewers, project managers). • EPM can be customized by the user to meet individual needs. • Information from EPM can be used for various activities including earned value management, workload planning, and budget formulation. • EPM can model a variety of project types, including major reviews, inspections, guidance development, recurring obligations (e.g. code committees), and branch-specific activities. • EPM data effectively communicates, at all organizational levels, project progress based on a realistic comparison of actual spending to planned spending. • EPM enables accurate predictions of cost and schedule to complete a project, starting early in the project, so that adjustments can be made before a crisis develops.
EPM Projects Follow Change Control Processes	• EPM project changes (e.g., due dates, task resources) are only made in accordance with an approved change control process. • Decisions are made in consideration of established earned value management (EVM) thresholds. • The process includes timely approval of changes and feedback to requestors.
Software Changes Are Controlled	• System requirements are developed with user input and based on best business practices. • Software changes are only made in accordance with an approved change control process. • Changes that may impact system users (e.g., look, feel, or functionality) are reviewed by a users group prior to implementation.

FINDINGS

EPM IS ACCEPTED

As was noted under the objectives, all staff should have a common understanding and feel comfortable implementing EPM in all of its roles and responsibilities, including system use, data input, system maintenance and enhancement, soliciting and using feedback, and reporting. As a result, users should not feel the need to develop tools outside of EPM because they trust the data and information provided and see the value of their contribution and use of the tool. In general, users have accepted EPM to the extent that they recognize it is the office standard and they are neither actively seeking another

alternative nor actively lobbying not to use it. Lack of acceptance relates to several areas, including the value of EPM, ownership of EPM, roles and responsibilities, accuracy of data, and work management.

VALUE OF EPM

The value of EPM as a project management tool in NRO has not yet been fully realized. Staff in each user role do not understand the value their contribution provides to the agency in supporting the NRC mission.

OWNERSHIP OF EPM

It is unclear who owns EPM, who owns the continued improvement to EPM, who sets the standards and procedures for its use, and who is the lead project manager for completing the implementation of EPM into NRO.

ROLES AND RESPONSIBILITIES

EPM Roles & Responsibilities – Roles and responsibilities for individuals using EPM for project or work management are unclear. Desktop guides for use by staff do not exist or are not adequate. Clear expectations are not communicated.

ACCURACY OF DATA

Most users want EPM to accurately reflect project work and resource data. (Data quality is addressed in more detail in the following section.) Users would prefer to see EPM updated to reflect accurate data as opposed to using other tools that provide a similar function. However, a frequency by which schedule information is updated is not adhered to or understood. Expectations for updating EPM information must be identified, articulated, communicated, executed, monitored, and enforced.

EPM is not used as a resource management tool because of the demonstrated inaccuracy of the resource data contained within the system. For example, "My Tasks" is not trusted as an accurate work list for most reviewers. There is no established culture within the NRC that supports proactive status updates and the expectations are not enforced. In addition, over-allocations cannot typically be managed using the Resource Center because of modeling and assignment inaccuracy. As a result, off-line spreadsheets are widely used to manage branch resource assignments instead of EPM.

WORK MANAGEMENT

EPM does not address critical work management issues, such as dependencies and modeling of key activities. Task interdependencies in the same project are not consistently modeled in project schedules. As a result, branch chiefs, lead project managers (PMs) and chapter PMs have to manually keep track of these dependencies when problems arise. In addition, inter-project dependencies are not shown in EPM. As a result, task completions are often improperly modeled in instances such as design center and reference site interactions or design center and reference site interactions with a combined license (COL).

Open items and request for additional information (RAI) responses are not effectively modeled in the schedules. As a result, design centers typically maintain off-line or Excel-based tracking solutions for managing this data. In addition, the work breakdown structure in the safety schedules is not based upon deliverables. As a result, EPM does not provide a useful critical path tracking mechanism.

EPM DATA ARE OF HIGH QUALITY

The data in EPM are the foundation for which system outputs are developed; therefore, it is essential that data quality is preserved. Through the various methods discussed previously, the WPIT team identified several issues associated with the quality of the data in EPM. In general, these issues fell into three major categories: accuracy of project work estimates, maintenance of schedule and resource integrity, and the status of projects.

ACCURACY OF PROJECT WORK ESTIMATES

Many users have raised concerns over the accuracy of effort estimates within a given project schedule. Currently, the project worksheets that are used to develop new schedules and resources estimates are outdated and do not rely on information from recently completed reviews. In several instances, the estimates were either too large or too small. In addition, these estimates have not always been consistently applied to the same work in other project schedules. Users have also expressed concerns over contracting efforts not being incorporated into the schedules. Users would benefit from development of realistic resource estimates that capture all work associated with a project schedule that are based on both historical data and staff experience.

MAINTENANCE OF SCHEDULE AND RESOURCE INTEGRITY

One of the most frequently raised concerns was that project schedules were, more often than not, out of date and did not reflect the current state of reviews. Some of the reasons cited for this concern were known schedule delays not being captured in the project schedules, and schedule change requests either not being processed on time or not being processed at all. The relationship between projects within a design center can also contribute to schedules being inaccurate. When a schedule delay occurs within a design certification review, an analysis is not always performed to determine whether this delay affects other schedules in that same design center. There should be controls in place to ensure the integrity of schedules.

Several users also identified issues with maintaining accurate resources assignments within a project schedule. To support the various resources analysis that are conducted (e.g., over allocations), controls should be put in place to ensure updates are made in EPM when a staff resource changes.

STATUS OF PROJECTS

Relative to the status of projects, many users have identified the need to either develop a new statusing approach or redefine the existing definitions. The general consensus is that the current definitions being used do not clearly identify the true status of project activities. In addition, the WPIT team found that many technical reviewers were implementing workarounds to statusing (e.g., statusing at 99% complete) to enable time charges to a given activity code beyond the completion of the deliverable. This is being done to account for efforts being expended past the deliverable dates that are not accounted for in the schedule (e.g., concurrence process, chapter days). Schedules should be reassessed to capture all of a reviewer's efforts, such that statusing efforts can follow established guidelines. The WPIT team also found that several users would benefit from having HRMS actual data incorporated into EPM. Users feel that this would help to provide the context needed to support a realistic status of efforts on a project. To further facilitate capturing the true status of a project, many users expressed the need to incorporate the contractors' status into EPM.

STAFF UNDERSTAND AND MANAGE ONGOING TASKS AND PRIORITIES

The most recent set of surveys and the previous assessment demonstrate that EPM is not everyone's preferred means to understand and manage ongoing tasks and priorities, as discussed below.

MY TASKS

Most technical reviewers will view "My Tasks" at least once per month, but they are not satisfied with the quality of the data. While they value the overview it provides, they consider the default views and ability to format to be cumbersome. Many users are frustrated by the instability of the system and some do not trust it to incorporate status updates. It is not clear if this is an overall system problem, or specific to some users. Some technical reviewers download "My Tasks" to a spreadsheet, which they then sort and filter to obtain useful information.

There was no consensus among reviewers of how and when to update their status. Some used "My Tasks," some contacted project managers, and some notified their branch chiefs or technical leads in response to "Late Reports." While most users were aware of the "blue card" defining status milestones, they did not necessarily follow these recommendations. There was also no consensus among technical reviewers of how and when to request a date change.

SCHEDULING

Many project managers reported that they relied on personal communication with the reviewers, rather than EPM data, to evaluate their project status. They fed any status, resource and date changes back to EPM through regular meetings with NPLS portfolio managers, but many felt the time it took for changes to be incorporated (up to 8 days) was too long.

REPORTS

Many branch chiefs use data from EPM, along with their knowledge of work not tracked in EPM, to generate their own schedules and milestone charts. Some maintain these files on SharePoint or network drives so they are available for use by staff. Some managers find the project-focused reports in EPM are not useful for providing the overall status across design centers.

PRIORITIES

Currently, EPM does not distinguish project priorities, which are instead passed down through the management chain. Several project managers observed they are not made aware when resources are pulled from their project to work on higher priority assignments.

STAFF CAN FORECAST WORK

The current version of EPM does not include the level of forecasting required to successfully support NRO personnel in their assignments. Non-licensing work and administrative time is not included in the schedules making it difficult to determine resource loading or predict future resource and budget requirements. EPM should include the capability to perform "what-if" analyses on variations of resource levels and dates; managers would find this to be a valuable tool when evaluating options. EPM should provide a means for entering staff unavailability (e.g., vacation, short-term assignments) to assist in identifying schedule conflicts and resources that are over or under-allocated. Users should have access to reports that include planned, actual, and percent completion data for current and future work, historical hours spent on projects and tasks, and resource assignments for current and future work.

Robust forecasting tools are necessary for NRO staff to model future work and provide input to the budget formulation.

EPM IS USER-FRIENDLY

During discussions with WPIT members, as well as in previous assessments, EPM users emphasized the need for the tool to be more user-friendly. Many of those surveyed appreciated the relative ease of finding documents in the SharePoint portal sections of EPM, as well as creating and routing RAIs in the eRAI system. Users of EPM would like at least this level of user-friendliness to be applied to the EPM scheduling and reporting systems.

The user's interface with EPM could be improved through various means, such as:

- Simplification of the user interface
- Additional training and guidance
- Various role-based reports
- Convenience tools such as automatic reminders

SIMPLIFICATION

The EPM tool includes numerous features and methods of customization. While these features create a powerful system, many users find the complexity confusing and cumbersome. In general, there appear to be too many "clicks" required to access desired information. In addition, there is often too much information on a screen. Users would benefit from fewer steps to obtain needed information. In addition, users often requested the ability to create and save more simple custom views in areas such as the Project Center and My Tasks.

TRAINING AND GUIDANCE

Many users identified the need for additional training and guidance on the use of EPM. Some guidance documents, including brochures and procedures, were developed early in the implementation of EPM. EPM users, however, are not generally aware of or using these documents. Other software packages in use at the NRC include features such as "tooltips" with pop-up advice, help menus, user manuals, quick reference sheets, and refresher training. For everyday activities, as well as more infrequent evolutions, the staff and managers surveyed feel that this additional assistance would be very beneficial.

REPORTING

Most users surveyed do not frequently view the standardized Crystal Reports in EPM. Similar to the discussion above, the variety and complexity of these reports is often overwhelming for users. As a result, many users develop their own customized reports, ranging from Gantt charts drawn in colored pencil, to spreadsheets of due dates selected manually from dozens of schedules, to custom Crystal Reports created by staff who have the software. While requests for specific reports vary and development of individualized reports for each user would be nearly impossible, users have expressed a strong desire to be involved in developing specific reports suited to their role.

CONVENIENCE TOOLS

The development of various convenience tools for users would also enhance the user-friendliness of EPM. For example, EPM users suggested developing email reminders of near-term or late tasks, integration of due dates with Outlook calendars, and automatic notification of new assigned tasks. Users

would benefit from an exploration of standard EPM features that could integrate the schedules in EPM with the software tools they use daily.

Of the more than 600 user comments tabulated by WPIT, nearly one quarter related to the need for EPM to be more user-friendly. Enhancements to the EPM interface, therefore, would be extremely effective in improving the integration of EPM into NRO culture. The "Conclusions and Recommendations" section below provides additional information on a path forward in this area.

EPM IS CONSISTENT

The working group identified several items that will need to be addressed before EPM can be considered consistent. Currently, the schedules do not have a similar look and feel for similar work across design centers. The work break down structure and task naming conventions vary between design centers. Some task descriptions do not describe the scope of work for the task nor do they identify the deliverable due at the end of the task. Schedules do not consistently reflect standard definitions for phases and deliverables, and there is no concise set of tasks used consistently across the design centers. In addition, there are no standard conventions or guidance for specific work activities such as closing open items or statusing a task to 100%. Lastly, the level of detail in schedules (e.g., chapter versus section tasks), including the activity codes assigned to tasks or task groups, is not consistent across schedules. Many staff perceive the current level of detail to be too great.

EPM IS FLEXIBLE

The current implementation of EPM appears to have been done in a "one size fits all" solution that does not reflect the needs of different organizational users and falls short of taking advantage of the features of the current platform. Further, the system appears to have been implemented in a way that does not adequately support both resource and performance management. With regard to resource management, the technical branches are not currently able to extract from the system information that focuses on utilization of staff resources leaving them unable to optimize. A solution is needed that would give the technical resource branches the ability to balance resource demand (project needs) with supply (resource capacity) across multiple projects and sub-programs (i.e., licensing, oversight, and advanced reactors). This solution would also allow them to track all resource work (both licensing and non-licensing).

Recognizing that performance management is different from resource management, the system needs to track performance in a way that clearly focuses on achieving cost and schedule commitments. The process is normally demand driven and is centered on a single project's resources needed to achieve cost/schedule goals. In this sense cost and schedule metrics should be established in order to guide when a project is within standard. Currently there are no metrics, which makes it difficult to process project performance when discussed at organizational project performance meetings.

Ultimately, the current system implementation has not recognized the roles of different users and their information needs in project execution. There is a tendency to think that the current software solution is going to provide everything users need or that users need everything it produces. Without clearly defined deliverables and information for the various users the system becomes rigid and difficult to manage because it understates the organizational needs, missing critical requirements for program success.

EPM PROJECT FOLLOWS CHANGE CONTROL PROCESSES

NRO projects are not executed in accordance with a project plan, change control guidelines, or a change control process. Change control is one of the most difficult problems facing NRO project managers. Many project managers and technical managers have adopted an informal process of handling change requests. Misunderstandings have arisen from this informality, and the data integrity and quality have suffered, as shown in unreliable earned value management reports of project performance.

The working group and the 2008 NRO EPM Self-Assessment identified a lack of a formal change control process to integrate and coordinate changes throughout the licensing review project cycle. There is no reasonable rigor applied consistently across NRO to process change requests, which in turn has resulted in poor data quality and integrity. In summary, there is no coordinated review of requested changes to the projects (both content and procedures); no identification of all task impacts; no translation of these impacts into project performance, cost, and schedule; no evaluation of the benefits and costs of the requested changes; no identification of alternative changes that might accomplish the same ends; no process to accept or reject changes; no communication of the changes to all concerned parties; no assurance the changes are properly implemented; and no regular reports that summarize all changes to date and their project impacts.

SOFTWARE CHANGES ARE CONTROLLED

The software tools that are encompassed under the umbrella of EPM have been changed with minimal user input. The 2008 NRO EPM Self-Assessment and the working group have identified that a stable, consistent software change process does not exist for EPM. System patches and repairs have been installed without the knowledge of the end users and resulted in unanticipated issues. According to the 2008 NRO EPM Self-Assessment, some needed patches have not been installed. EPM Resource staff do not communicate to affected users if fixes have been implemented or are complete. It is not clear who decides which software changes are selected, when they are reviewed for cost benefit and how they are subsequently implemented.

Changes to be implemented are not systematically evaluated for user impact. Users are not consulted or aware of the potential impacts prior to software being installed. Within EPM, it was identified that key software tools were either changed or eliminated and these tools were viewed by end users as essential to identifying and tracking resource constraints in order to manage multiple projects. This lack of understanding resulted in removing a tool available for budget impact estimation and caused the staff to develop a variety of inefficient workarounds to obtain needed information.

Ineffective communication of pending patches or fixes and their likely impact on end users prevent the staff from anticipating the effect of software changes. Processes could be established and implemented to provide consistency and a stable platform which would allow end users to exercise EPM with more confidence.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings and the strategic vision for EPM, WPIT proposes two high-level changes, as well as a series of improvements that can be developed over time. Making the two high-level changes is essential to ensure implementation of further improvements.

EPM PROGRAM MANAGER

An EPM Program Manager position is established and assigned the responsibility to lead the rest of the change management process for enhancing EPM, implement the recommendations contained in this report, and manage continuous improvement and functionality of EPM. It needs to be clear to all EPM users who is responsible for managing implementation of EPM as a project and for defining requirements, managing future enhancements, and implementing changes to ensure EPM fulfils the vision above.

STEERING COMMITTEE

A steering committee is formed to ensure that user needs continue to be solicited and addressed and that EPM serves the needs of the office. This group needs to have sufficient independence, responsibility, and authority to monitor resolution of WPIT and other recommendations. All major changes are reviewed and approved by this group.

A draft charter for the steering committee is provided in Enclosure 1. It is intended that this charter be signed by the Office Director to communicate the importance of this effort.

NEAR-TERM RECOMMENDATIONS (1 TO 6 MONTHS)

ESTABLISH AND MAINTAIN A SENSE OF URGENCY AND IMPORTANCE IN USING EPM THROUGHOUT NRO

A sense of urgency is a key component of the change management process. Without this sense of urgency, enhancements to EPM may be postponed indefinitely. Therefore, continued management communication (e.g., through direct communications, all-hands meetings, and web announcements) on the importance of both using and enhancing EPM is critical to the success of these recommendations. While communication initiatives of both WPIT and the proposed EPM steering committee are important, management attention and oversight is key to ensuring that NRO staff understand and meet their responsibilities related to EPM. To establish and maintain a sense of urgency and facilitate management attention and oversight, performance metrics should be established for both system use and project performance. These metrics can be developed and tracked down to the end user but measured for the office. This would provide the visibility needed to further improve EPM and sustain this improved state.

DEFINE ROLES AND RESPONSIBILITIES FOR ALL EPM USERS AND OWNERS

To ensure consistent use of EPM across the office, NRO should establish and communicate to staff clear expectations for each user group (technical reviewers, project managers, branch chiefs) and each supporting function (analysts, schedulers, project managers) specifying their responsibility for maintaining accurate information in the schedule.

ESTABLISH A PROJECT CHANGE CONTROL PROCESS WITH CLEARLY DEFINED ROLES, RESPONSIBILITIES, TIMEFRAMES, AND THRESHOLDS FOR APPROVAL

The office should follow simple guidelines, applied with reasonable rigor, to establish an effective change control procedure. Project managers should control the projects in accordance with approved change and earned value management control criteria. Project managers should ensure project scope, schedule, and cost are managed against the control criteria. A change control procedure should be developed with clearly defined roles, responsibilities, timeframes, and thresholds for approval.

ESTABLISH A SOFTWARE CHANGE CONTROL PROCESS THAT SOLICITS USER INPUT, CONSIDERS THE IMPACT OF CHANGES ON USERS, AND COMMUNICATES THE CHANGES TO USERS PRIOR TO IMPLEMENTATION

The process of controlling software change is essential to establishing a stable platform that users will trust. NRO should develop and implement simple guidelines and establish an effective change management process that provides users with the impact of proposed software changes. A major change in fit, form or software function should be communicated sufficiently in advance to all affected stakeholders. Proposed software changes should be reviewed by stakeholders, prior to being installed.

DEVELOP PROCESS, WITH CRITERIA, TO DEFINE THE WORK CAPTURED IN EPM

To provide more accurate forecasting and to be able to realistically perform resource loading, both licensing and non-licensing work should be included in EPM. A process should be developed that identifies which non-licensing work will be entered into EPM and who would have the ability to enter and make changes to those tasks. The process could include a set of criteria for determining the work that will be entered into EPM. In addition, it should provide access for entering and changing tasks based on the category of the task.

DEVELOP AND PROVIDE QUICK REFERENCE GUIDES

Quick reference guides should be developed to provide the staff with step-by-step directions on performing common tasks such as changing work status, printing reports, finding activity codes, and locating and manipulating schedules. These quick reference guides should be easily accessible from the NRO SharePoint site.

MEDIUM-TERM RECOMMENDATIONS (6 TO 12 MONTHS)

CONDUCT BENCHMARKING AND IDENTIFICATION OF BEST PRACTICES IN THE PUBLIC AND PRIVATE SECTORS

The "benchmarking" of organizations that use an EPM tool as a means to coordinate work activities should be used as an ongoing self-assessment to compare their performance and best practices with internal activities, with the ultimate goal of identifying changes that can make significant improvements to the efficiency and effectiveness of the agency's safety reviews. Typical benchmarking programs include analyzing and acting on the information collected by implementing features that can be adapted to our programs, monitoring improvements and conducting ongoing benchmarking activities, emulating the best of the best practices found, capitalizing on existing strengths, and eliminating weaknesses.

INTERACT WITH USERS TO IDENTIFY AND CREATE ROLE-SPECIFIC REPORTS

As discussed in the "EPM is user-friendly" section above, many users develop their own customized reports rather than using standardized reports currently available. Users have expressed a strong desire to be involved in developing specific reports suited to their role. Interacting with users to develop a concise set of reports suited to each of the various NRO roles (e.g., technical reviewer, branch chief) would leverage the abilities of the EPM support staff and reduce the effort spent by individual users. While developing the initial requirements for the reports would require time and resources, users would find an immediate benefit once the reports are available.

INTERACT WITH USERS TO IDENTIFY NEEDS AND IMPROVEMENTS FOR "MY TASKS"

The EPM Program Manager should interact with users to understand how "My Tasks" is used, investigate the reported unreliability of the system, and explore other methods for statusing and summarizing ongoing tasks. The result should be either resolution of the perceived problems with "My Tasks" or replacement of "My Tasks" with a new process. The final product should incorporate user-friendly features requested by users, including the ability to format, and should be introduced so there is a clear understanding of role-specific responsibilities, including error reporting.

ESTABLISH AND COMMUNICATE NRO PROJECT PRIORITIES AND LINK TO EPM TASKS

To identify current licensing project priorities, EPM should be modified to reflect a simple method of highlighting the priority of projects (e.g., color-coding of EPM tasks). This would allow staff and project managers to be promptly notified of changes when resources are adjusted from a project to work on higher priority assignments. This recommendation could also result in more frequent monitoring by all users when confidence is established in the schedules and the priorities.

LONG-TERM RECOMMENDATIONS (GREATER THAN 12 MONTHS)

STANDARDIZE DESIGN CENTER INPUTS, OUTPUTS, AND WORK BREAKDOWN STRUCTURE

An effort to standardize future design center inputs and outputs, and work breakdown structure should be undertaken to develop consistency across the design centers. Through better standardization of work breakdown structure and clear naming conventions among design centers, it will be more straightforward to build schedules with a similar look and feel for the same work across the centers. While there may be a desire to maintain the same level of detail provided in current schedules, it is recommended to assign activity codes at the milestone level and/or to group similar reviews under the same activity code.

IDENTIFY ADDITIONAL TRAINING NECESSARY TO IMPLEMENT DEFINED ROLES AND RESPONSIBILITIES TO OBTAIN MAXIMUM BENEFIT FROM EPM

Effective use of EPM requires that staff understand how to enter, use, and analyze the data that resides in EPM. Key elements of training that need to be implemented include the following:

- A high level overview of EPM roles and responsibilities should be provided as a presentation during an all-hands type meeting.
- The current classroom training for EPM should be evaluated and enhanced with input from users and further tailored with role-specific information. Staff should be required to take this training when they begin to use EPM.
- Elements of the enhanced classroom training should be included in refresher training that is required for all EPM users both periodically and as significant system changes are made.
- In addition to the instructor led classes, webinars, web-based refresher classes, and short web-based training videos should be available for specific tasks for which staff may need assistance.
- Project Managers should be provided with training on the value and use of earned value management as it exists in NRO.
- Staff in various roles should be provided with training on the standard reports that are available with a focus on the meaning of the data and options for tailoring the reports to meet various needs. As needed, staff should have access to training on the use of Crystal Reports to create custom reports.

DEVELOP AND ISSUE ADDITIONAL GUIDANCE FOR USERS

Surveys of EPM users have revealed the need to develop and issue additional guidance on the use of EPM. With the improvements in EPM that will result from implementation of the WPIT recommendations, technical guidance for the use of EPM could include the following:

- Prioritizing daily tasks including licensing and non-licensing work
- Customizing and sorting EPM views
- Establishing real time tasking for emergent work with alarms and notifications for new work
- Transmitting electronic versions of deliverables and access for viewing all work in office
- Adjusting completion dates for EPM tasks with justification where the critical path is not affected
- Requesting additional task hours
- Navigating EPM standard content and format by design center and application
- Searching EPM for assignments by resource and by task
- Using the Help Button
- Establishing automatic alerts when an RAI is modified in the workflow process
- Locating references (e.g., guidance, application documents, and safety evaluations) for an assigned review
- Entering draft safety evaluation reports into the workflow process

Additional guidance should also be developed for project managers and management in the use of the improved EPM.

PROVIDE A MECHANISM TO PERFORM "WHAT-IF" ANALYSES ON SCHEDULES

Management should be provided with a method for modeling various scenarios with current schedules to determine the feasibility of implementing changes to time frames or resources. Performing "what-if" analyses will allow managers to determine the effects of various schedule compression techniques before making final decisions.

COMMUNICATION STRATEGIES

Once the WPIT's report and recommendations are accepted by NRO management, the report will be made available on the NRO website. Other methods (e.g., posters, emails, presentations at division all-hands meetings) can also be used to communicate the team's results, as well as to describe ongoing efforts to improve EPM and users' roles in these efforts.

ENCLOSURE 1: DRAFT CHARTER FOR EPM STEERING COMMITTEE

This enclosure provides a draft charter for the EPM Steering Committee. It is intended that a document containing this charter, revised as necessary, will be signed by the Director of NRO.

PURPOSE

The Enterprise Project Management (EPM) Steering Committee ensures that user needs continue to be solicited and addressed throughout the implementation of EPM in the Office of New Reactors (NRO).

ACTIVITIES

The EPM Steering Committee:

- Receives periodic updates on actions taken to address the recommendations of the Work Process Improvement Team (WPIT)
- Reviews and approves all major changes to the EPM user interface
- Assesses user needs on a periodic basis to identify and prioritize improvements to EPM tools
- Briefs NRO management and communicates with NRO staff on progress related to EPM improvements

AUTHORITY

The EPM Steering Committee, through its chair, reports directly to the Director of NRO on its activities.

The Committee is given authority by the Director of NRO to provide user approval for changes to the EPM system. This user approval is one requirement for software changes under the EPM software change control process.

The Committee is also given authority by the Director of NRO to obtain periodic briefings from NRO staff on EPM topics, as well as to survey NRO staff periodically to gauge progress in enhancing EPM.

The Director of NRO retains authority for approving conceptual recommendations for major EPM improvement initiatives, such as those identified in the WPIT progress report and documented in this charter as milestones. When the EPM Steering Committee identifies additional improvement initiatives derived from user feedback, the Committee presents these to the Director for approval, then continues in its oversight role in consultation with the EPM Program Manager to ensure that approved initiatives are implemented.

SCOPE

The EPM Steering Committee focuses on end users' interface with EPM tools, as defined below.

- **"End users"** are defined as the NRO staff and management who use EPM tools (e.g., technical reviewers, inspectors, project managers, branch chiefs, managers).
- **"Interface"** in this context means viewing, reporting on, and requesting changes to data found in the EPM system.
- **"EPM tools"** includes the tools in the "Scheduling" tab in EPM (http://epm.nrc.gov), specifically My Tasks, the Project Center, and the Resource Center. The term "EPM tools" is also used to refer to reports that draw on EPM data (e.g., Crystal Reports, dashboards).

MEMBERSHIP

The members of the EPM Steering Committee are selected to provide a cross-section of NRO EPM users, both organizationally and functionally. The original membership of WPIT is provided as an example; although some WPIT members are willing to continue service as EPM Steering Committee members, this consistency is not essential. Additional team members with specific expertise may be needed in the future.

- Christian Araguas – Technical Assistant (ARP)
- Jeff Ciocco – Licensing Project Manager (DNRL)
- Theresa Clark – Technical Assistant (DSRA)
- Samantha Crane – Inspector and Technical Reviewer (DCIP)
- Allen Fetter – Environmental Project Manager (DSER)
- Mark Lombard – Manager (DSRA)
- Mike McCoppin – Branch Chief (DNRL)
- Greg Hatchett – Branch Chief (DSER)
- Michelle Hayes – Technical Reviewer (DSRA)
- Ed Roach – Branch Chief (DCIP)
- Thomas Scarbrough – Technical Reviewer (DE)
- Sue Strosnider – Program Analyst (PMDA)

FREQUENCY OF MEETINGS

The EPM Steering Committee meets at least once a month at a mutually agreed-upon time and location. Committee members are responsible for identifying suitable times and making reasonable arrangements to be present. If more frequent meetings are requested to assess potential EPM changes or to monitor near-term recommendations for EPM improvement, these will be scheduled at a time when at least 75 percent of the team members can be present.

TIME PERIOD OF ACTIVITY

This charter remains valid for 18 months from date of signature. At this point, the Director of NRO will review this charter for any necessary scope adjustments.

The need for an EPM Steering Committee, however, is ongoing to ensure continued functionality and improvement of EPM as used in NRO.

MILESTONES

The EPM Steering Committee will direct its own activities as described under the "Authority" and "Scope" sections above. Some high-level milestones, however, are provided below. All times are relative to the date the charter is signed.

- **+1 month:** Hold kick-off meeting and develop plan for implementing the charter, as well as overseeing the initial WPIT recommendations.
- **+6 months:** Report to Director of NRO on completion of the short-term WPIT recommendations.
- **+12 months:** Report to Director of NRO on completion of the medium-term WPIT recommendations.
- **+18 months:** Report to Director of NRO on progress related to the long-term WPIT recommendations, as well as a recommendation on whether to continue the EPM Steering Committee.

COMMUNICATIONS

The members of the EPM Steering Committee are expected to serve as the advocates for the EPM enhancement activities, including updating their peer groups on plans and progress. This communication will continue informally. In addition, the EPM Steering Committee will take advantage of formal communication opportunities, including:

- NRO website news postings, at least every 2 months
- Presentations at division and office all-hands meetings, visiting each division through one of the venues at least every 6 months
- Presentations to NRO management at program meetings, at least every 6 months

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 5:45 PM
To: ODriscoll, James; Grady, Anne-Marie
Subject: RE: Proposed RAI on 6.2.4 for US-APWR Other Defined basis for GDC 56 lines from RWSP to suction of SI and CS/RHR

Great issue Jim –

I completely agree with your points. Please put the RAI in the system.

A few minor comments ...

(b)(5)

Again, great issue,
CJ

From: ODriscoll, James
Sent: Wednesday, March 16, 2011 11:03 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: Proposed RAI on 6.2.4 for US-APWR Other Defined basis for GDC 56 lines from RWSP to suction of SI and CS/RHR

Chris,
Please see the proposed RAI below and comment.

(b)(5)

(b)(5)

1.

2.

(b)(5)

h. (b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: SNL Energy
To: Flanders, Scott
Subject: Webinar: FERC"s Transmission NOPR (Why all the fuss?)
Date: Wednesday, March 23, 2011 10:37:35 AM

Join us for an informative discussion of this controversial rule and its implications.

If you have trouble viewing this email, click here.

FERC's Transmission NOPR (Why all the fuss?)

Thursday, March 31 • 1:30-3:00 p.m. ET

Registration: www.snlcenter.com/nopr

FERC's landmark transmission planning and cost allocation rule, proposed in September 2010, has divided an industry still grappling with how power lines should be built and who should pay for them. Comments on the Notice of Proposed Rulemaking (NOPR) poured in last year, some in general support and others in adamant opposition. A group of senators, concerned that the rulemaking would stick their constituents with the bill for costly transmission projects, recently introduced legislation to counter it.

Join a panel of experts for a lively discussion on the rule's most controversial elements and how they could impact your short- and long-term planning strategy.

Panelists:

- **Patricia Alexander** – Advisor, Dickstein Shapiro LLP
- **Joseph T. Kelliher** – Executive Vice President, Federal Regulatory Affairs, NextEra Energy, Inc.
- **Clair J. Moeller** – Transmission Asset Management, Midwest Independent Transmission System Operator, Inc.

Moderator: Glen Boshart – Senior Industry Editor, SNL Energy

Read panelist bios here.

Agenda:

- Is the rule necessary?
- Would it adequately account for regional transmission planning differences?
- What kind of public policy goals should be considered and what kind should not?
- How should the costs of regional, high-voltage transmission lines be allocated?
- Is FERC's proposal necessary to offer guidance on an issue absent from federal legislation, or is transmission cost allocation and planning best left up to policymakers?

- State regulators across the country have spoken out in opposition to the NOPR, warning that it would intrude on matters reserved for state authorities. Despite FERC's assurances, do these regulators have a point?
- Should incumbent utilities keep their right of first refusal to build new lines?
- What impact might this provision have on both incumbent utilities and merchant transmission developers?

Register or get more info: www.snlcenter.com/nopr

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From: Ashley, Clinton
Sent: Wednesday, March 23, 2011 8:25 PM
To: Carneal, Jason
Cc: Jackson, Christopher
Subject: RE: help - if possible

(b)(5)

Clint

From: Carneal, Jason
Sent: Wednesday, March 23, 2011 1:42 PM
To: Ashley, Clinton
Subject: help - if possible

Clint:

OGC had the following comment on a paragraph in Section 6.3:

(b)(5)

Thanks,

Jason

JASON CARNEAL
PROJECT MANAGER
U.S. NUCLEAR REGULATORY COMMISSION
NRO/DNRL/NARP (T-6J4)
301-415-3813

From: McKirgan, John
Sent: Wednesday, March 23, 2011 8:55 PM
To: Lee, Samuel
Cc: Jackson, Christopher
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Sam, Chris had some good comments on Ch 23.E Changes to Potable Water System and main control room envelope. I wanted to make sure you didn't have any objections.

Are you also reviewing Ch 23? Any issues we should be aware of?

Thanks,

John

From: Jackson, Christopher
Sent: Tuesday, March 22, 2011 1:42 PM
To: Grady, Anne-Marie; McKirgan, John
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,

I have reviewed the document and have a few comments. Attached is a mark-up.

I have reviewed each of these individually but this is the first time I saw all changes together. Unfortunately it is a little confusing because a number of the changes are related but not integrated. For example, the potable water system and the control room changes are related but written up separately. This is the case for a few of the changes. At this point there is not much we can do to integrate.

A few minor comment –

- I do not like the name. Why mention ISG 11 in the title?

A few major comments –

(b)(5)

1

(b)(5)

Aside from the major comments – I recommend concurrence.

I will look at chapter 6 in the morning.

CJ out!

From: Grady, Anne-Marie
Sent: Monday, March 21, 2011 4:46 PM
To: McKirgan, John
Cc: Jackson, Christopher
Subject: RE: AP1000 Final SE Chapter 23 - Concurrence

John,
I reviewed my portions of the SE, containment isolation and leak rate testing, in sections 23V and 23W. The changes are style guide changes only. Except for two identical comments I have added to the Evaluation in 23V. Accident temperatures needed to be added to a valve and piping spec, which W revised and I audited. No change was or is needed to the DCD text. We were simply using the confirmatory items to get W to revise the spec. Which they did.
I have attached the SE with my comments located at the 2 sentences which I believe are unnecessary.
Anne-Marie

From: McKirgan, John
Sent: Monday, March 21, 2011 10:43 AM
To: Jackson, Christopher; Grady, Anne-Marie
Cc: Wagage, Hanry
Subject: FW: AP1000 Final SE Chapter 23 - Concurrence

Folks, Please look at your sections of the attached Ch 23 and give me a recommendation for concurrence or give me comments/edits as soon as possible. This is a short turn around. Thanks, John

Hanry, your section is not in yet.

Thanks,

John

From: Buckberg, Perry
Sent: Monday, March 21, 2011 8:39 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John; Segala, John; Lee, Samuel; Jackson, Terry; Shams, Mohamed; Jenkins, Ronaldo; Kowal, Mark
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej; Stubbs, Angelo; Hernandez, Raul; Wheeler, Larry; Zhang, Deanna; Chopra, Om; Patel, Pravin; Le, Hien; Tjader, Theodore; Chapman, Travis
Subject: AP1000 Final SE Chapter 23 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 23 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg
Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

The SharePoint folder (Design Certification Review - AP1000 Design / Project Documents / All AP1000 DCA Documents / Tool 25 FSE Chapters) is:
http://epm.nrc.gov/NRCPWA/Design%20Certification%20Review%20-%20Westinghouse%20AP1000/Project%20Documents/Forms/Default.aspx?RootFolder=%2fNRCPWA%2fDesign%20Certification%20Review%20%2d%20Westinghouse%20AP1000%2fProject%20Documents%2fAll%20AP1000%20DCA%20Documents%2fTool%2025%20%2d%20FSE%20Chapters&FolderCTID=&View=%7bDE1B422C%2dDFCA%2d4B68%2dA34D%2d2EF3460A463A%7d

- **AP1000 SharePoint** - (Tool 25 - FSE Chapters)
  - Chapters for Concurrence – clean
  - Chapters for Concurrence – mark-ups

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 4:49 PM
To: Hsii, Yi-Hsiung
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Thanks Gene,

It is interesting to note that the non-prop RAI response never mentioned the IFM and MVG. The prop version does mention these components but I can not imagine these would be proprietary.

CJ

From: Hsii, Yi-Hsiung
Sent: Wednesday, March 23, 2011 4:39 PM
To: Jackson, Christopher
Cc: McKirgan, John; Hayes(NRO), Michelle; Donoghue, Joseph
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Chris,

Yes, it is OK except that "intermediate flow mixing" should be "intermediate flow mixer."

Gene

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 11:31 AM
To: Hsii, Yi-Hsiung
Cc: McKirgan, John; Hayes(NRO), Michelle
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Thanks Gene –

Are you looking into the IFM and MVG comment?

CJ

From: Hsii, Yi-Hsiung
Sent: Wednesday, March 23, 2011 12:14 PM
To: Jackson, Christopher
Cc: McKirgan, John; Hayes(NRO), Michelle
Subject: RE: AP1000 Final SE Chapter 6 - Concurrence

Chris,

It was an unit conversion error. "3.0 kg (6 lb)" should be "2.73 kg (6 lb)."

Gene

From: Jackson, Christopher
Sent: Wednesday, March 23, 2011 6:28 AM
To: Hsii, Yi-Hsiung; McKirgan, John; Hayes(NRO), Michelle
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Gene,

Can you take a look at this sentence? It was in the ISL mark-up. Can you confirm it is OK?

CJ

(b)(5)

From: McKirgan, John
Sent: Monday, March 21, 2011 8:29 PM
To: Jackson, Christopher; Grady, Anne-Marie
Subject: FW: AP1000 Final SE Chapter 6 - Concurrence

Chris, Anne-Marie,

Can you please review this SE and give me a recommendation for concurrence by 3/25?

PS Michelle has agreed to look at her stuff.

Thanks,

John

From: Buckberg, Perry
Sent: Friday, March 18, 2011 11:21 AM
To: Donoghue, Joseph; Terao, David; McKirgan, John
Cc: Hsii, Yi-Hsiung; Budzynski, John; Honcharik, John; Makar, Gregory; Ray, Neil; Downey, Steven; McKenna, Eileen; VanWert, Christopher; Forsaty, Fred; Ford, Tanya; Wagage, Hanry; Drozd, Andrzej
Subject: AP1000 Final SE Chapter 6 - Concurrence

Branch Chiefs,

Please review the attached marked-up version of Chapter 6 and concur/comment in reply by CoB **March 25, 2011**. The attached shows all of the changes made since the Advanced Final SE chapter was issued. In addition, please see the tech editor's **specific comments/questions** 1 thru 6 below and address separately in an e-mail to me only if needed.

Both this marked-up version and a clean version of AP1000 Final Safety Evaluation (FSE) draft Chapter 6 has been placed in the SharePoint (**link is below**).

The principal difference between the issued AFSE chapter and these draft FSE chapter is the insertion of standard CI closure language. Also, technical editing changes were made for internal consistency in wording. Any needed technical changes were already discussed/resolved with the appropriate technical staff before incorporation.

- A chapter signature sheet will follow your concurrence for use with OGC, Division Directors and for our records.
- If you have a question or need assistance, please contact me.

Thanks,

Perry Buckberg

Senior Project Manager
Office of New Reactors
AP1000 Projects Branch
x1383 T-07E31

Specific Comments/Questions

1)

2)

(b)(5)

3)

(b)(5)

4)

5) (b)(5)

6)

(b)(5)

(b)(5)

From:	Conly, John
To:	Aitken, Diane; Barrie, Ashley; Bell, Russ; Bird, Bobby; Borsh, Gina; Buschbaum, Denny; Bywater, Russell; Caldwell, Jan; Carver, Ronald; Certrec; Ciocco, Jeff; Clouser, Tim; Collins, Elmo; Conly, John; Cosentino, Carolyn; Degeyter, Brock; Evans, Todd; Flores, Rafael; Frantz, Steve; Freitag, Al; Hamzehee, Hossein; Hoshi, Masaya; Ishida, Mutsumi; Johnson, Michael; Kawanago, Shinji; Keithline, Kimberley; Kellenberger, Nick; Koenig, Allan; Kramer, John; Lucas, Mitch; Madden, Fred; Matthews, David; Matthews, Tim; McConaghy, Bill; Monarque, Stephen; Moore, Bill; ComanchePeakCOL Resource; Onozuka, Masanori; Paulson, Keith; Plisco, Loren; Reible, Robert; Rund, Jon; Simmons, Jeff; Singal, Balwant; Sirirat, Nan; Sprengel, Ryan; Takacs, Michael; Tapia, Joe; Tindell, Brian; Turner, Bruce; Volkening, David; Vrahoretis, Susan; Williamson, Alicia; Willingham, Michael; Woodlan, Don
Cc:	Hill, Craig
Subject:	Submittal to the NRC
Date:	Wednesday, March 23, 2011 4:00:46 PM
Attachments:	TXNB-11017 RAI 183 Supp.pdf

Luminant has submitted the attached letter to the NRC providing supplemental information for RAI No. 5117 (CP RAI #183) on station blackout procedures. If there are any questions regarding this submittal, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John T. Conly

COLA Project Manager
(254) 897-5256

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SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 5117 (CP RAI #183)

SRP SECTION: 08.04 – Station Blackout

QUESTIONS for Electrical Engineering Branch (EEB)

DATE OF RAI ISSUE: 10/19/2010

QUESTION NO.: 08.04-1

The regulatory basis for this question is discussed in NUREG-0800, Standard Review Plan (SRP), Section 8.4 and Regulatory Guide 1.155.

The US-APWR DCD, Tier 2, Section 8.4.2.2, "Conformance with Regulatory Guidance," states that the applicant's conformance with Position C.3.4 of Regulatory Guide 1.155, "Station Blackout," would be demonstrated by providing procedures and training to cope with Station Blackout (SBO). US-APWR DCD, FSAR Section 13.5, "Plant Procedures," explains that the development of administrative and operating procedures to be used by the operating organization (plant staff) is designated as the responsibility of the COL Applicant. Therefore, a COL applicant referencing the US-APWR design is responsible for SBO procedures, which include (1) Station Blackout Response Guidelines, (2) AC Power restoration Guidelines and (3) Severe Weather Guidelines. Confirm whether these procedures and training are addressed in the COL, Part 2, FSAR with references to the DCD FSAR description. If these procedures are not addressed in the COL FSAR, provide the procedures and revise the FSAR to reflect the addition of these procedures.

SUPPLEMENTAL INFORMATION:

Although Luminant's response to this question stated that additional revision of the FSAR is not required, based on a subsequent teleconference with the NRC, Luminant has revised FSAR Section 8.4 to refer to Subsection 13.5.2.1.

Impact on R-COLA

See attached marked FSAR Revision 1 page 8.4-1

Impact on S-COLA

None; this response is site-specific.

Impact on DCD

None.

8.4 STATION BLACKOUT

This section of the referenced DCD is incorporated by reference with ~~no~~the following departures and/or supplements. RCOL2_08.04-1 S01

CP SUP 8.4(1) Add the following text after the ninth paragraph of DCD Subsection 8.4.2.2.

The procedures to cope with SBO are addressed in Section 13.5 and the training is addressed in Section 13.2. In particular, although not specifically referenced, SBO procedures are discussed in FSAR Subsection 13.5.2.1. This subsection addresses Operating and Emergency Operating Procedures as well as the Procedure Generation Package. The Station Blackout Response Guideline, the AC Power Restoration Guideline, and a Severe Weather Guideline are covered by the discussions in FSAR 13.5.2.1.

From:	Karas, Rebecca on behalf of Coffin, Stephanie
To:	Flanders, Scott; Cook, Christopher; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc:	Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject:	FW: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

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

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

Nilesh and I talked. Stephanie called and said someone senior from DSER really needs to go to this. I can discuss with you. Cliff is WAH that day, and Nilesh is out.

-----Original Appointment-----
From: Coffin, Stephanie
Sent: Wednesday, March 23, 2011 10:26 AM
To: Coffin, Stephanie; Karas, Rebecca; NRO_Division_Directors; NRO_Deputy_Division_Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie
Cc: Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph
Subject: FW: Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

From:	Akstulewicz, Frank
To:	NRO Deputy Division Directors; NRO Division Directors; Holahan, Gary; Johnson, Michael
Subject:	brainstorming for Session 3
Date:	Thursday, March 24, 2011 1:19:40 PM
Attachments:	Session 3 - SES retreat - march 30.pptx

Mike Mayfield and I have concluded that it would be difficult to do extensive preplanning for a session that is heavily dependent on the outcome of the session before. However, not to be deterred by the near impossible, we have taken a shot at an outline that could be followed to document the next logical steps to communicate to a wide range of audiences the outcomes and timelines resulting from Session 2

We would appreciate any and all comments on our outlined strategy.

Session 3
Communication of decisions and followup actions

Objective

- The objective of this session is to define:
  - Key messages
  - The audience
  - The owners
  - The timeline

Key Messages

- Depending on the outcomes achieved in Session 2, it will be necessary to develop the key messages that are to be communicated around or about those outcomes.

- Message 1:

- Message 2:

- Message 3:

The Audience

- Who are the persons, stakeholders or interested groups (both internal and external) that should be informed?

- Internal entities -

- External entities -

The responsible spokespersons

- The spokespersons will be dependent on the list of parties notified in the slide before. Broadly we can discuss them as internal and external

- Internal parties -

- External parties -

Timeline

Communication must be timely to be effective. In essence we have developed a mini communication plan with the completion of this activity

We will need to construct a separate timeline for each party

How will we communicate?

Will we use verbal, or nonverbal or both?

Internal parties –

External parties -

From: Snyder, Amy
To: Lauron, Carolyn; Akstulewicz, Frank
Cc: Flanders, Scott; Dent, Kimberly
Subject: RE: *Pending* Additional DSER Comments on Chairman"s Monthly
Date: Thursday, March 24, 2011 9:07:24 AM

Thank you.
Much appreciated. ☺
Amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M

U.S.NRC
Protecting People and the Environment

(301) 415-6822 FAX;301 415-6640
amy.snyder@nrc.gov

From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 9:01 AM
To: Snyder, Amy; Akstulewicz, Frank
Cc: Flanders, Scott; Dent, Kimberly
Subject: *Pending* Additional DSER Comments on Chairman's Monthly

Hi –

Scott just called and he has comments on the monthly report. As soon as I get them from him, I'll contact Amy.

Thanks,
Carolyn
2736

From:	Snyder, Amy
To:	Hatchett, Gregory; Cruz, Jeffrey
Cc:	Lauron, Carolyn; Joshi, Ravindra; Sutton, Mallecia; Akstulewicz, Frank; Flanders, Scott
Subject:	RE: ACTION: Please provide addtiional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.
Date:	Thursday, March 24, 2011 9:44:34 AM

Thank you.

Appreciate you.

Amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M

U.S.NRC
Protecting People and the Environment

(301) 415-6822 FAX;301 415-6640
amy.snyder@nrc.gov

From: Hatchett, Gregory
Sent: Thursday, March 24, 2011 9:43 AM
To: Snyder, Amy; Cruz, Jeffrey
Cc: Lauron, Carolyn; Joshi, Ravindra; Sutton, Mallecia; Akstulewicz, Frank; Flanders, Scott
Subject: RE: ACTION: Please provide addtiional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.

Amy,

Mallecia will provide you with the revised language for the FSEIS. The final impact statement will be published tomorrow in the *Federal Register* by the EPA and NRCs notice of availability, if not in the *Federal Register* today, it will be tomorrow.

Thanks,

Greg

From: Snyder, Amy
Sent: Thursday, March 24, 2011 9:38 AM
To: Cruz, Jeffrey; Hatchett, Gregory
Cc: Lauron, Carolyn; Joshi, Ravindra; Sutton, Mallecia; Akstulewicz, Frank
Subject: ACTION: Please provide addtiional information for the Vogtle input to the Semiannual Report to Congress- as soon as possible.
Importance: High

Vogtle COLA

On March 28, 2008, Southern Nuclear Operating Company (SNOC) submitted a COLA for two AP1000 units to be located at its Vogtle site near Augusta in Burke County, Georgia.

The initial application also referenced the Vogtle ESP application, Revision 5, dated December 23, 2008. The SER for an ESP application for the Vogtle site was issued by the NRC staff in February 2009. The ESP for the Vogtle site was issued on August 26, 2009. Since then, three amendments were issued (on May 21, 2010, June 25, 2010, and July 9, 2010) to the ESP Permit.

In a letter dated October 29, 2010 (ML102310362), the staff established a new schedule to rebaseline the review so that it will be consistent with the DCD schedule contained in the June 21, 2010, letter to Westinghouse. The NRC staff is scheduled to complete the FSER in June 2011.

Jeff- need to insert a paragraph here similar to the one on Summer but needs to apply to Vogtle:

(b)(5)

Thank you.
amy

Amy M. Snyder
Technical Assistant for Licensing Operations
Office of New Reactors
Division of New Reactor Licensing
T6F24
M.S. T6C20M

U.S.NRC
Protecting People and the Environment

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amy.snyder@nrc.gov

From: Jones, Henry
To: Lynett, Patrick
Cc: Eric; Raione, Richard; Chokshi, Nilesh; Flanders, Scott
Subject: RE: DC + SIAM
Date: Thursday, March 24, 2011 10:50:00 AM

Pat.

Thanks for the effort. Perhaps another opportunity will arise in the near future.

Henry

From: Lynett, Patrick [mailto:plynett@tamu.edu]
Sent: Wednesday, March 23, 2011 11:25 AM
To: Eric
Cc: Jones, Henry
Subject: RE: DC + SIAM

Eric, Henry-

No, I never made it into DC last week unfortunately. Jim P (long last name – he is at the NRC) emailed me to call him, but we somehow never managed to connect over the course of a day and a half. He was out of the office and my cell signal wasn't that good. He was supposed to give me the contact person and place.... Anyhow, I showed up at the front gate of DC without any contact info, and they turned me around and showed me the way back out. Oh well – but thanks for trying to set it up – always tough on short notice but last week was particularly tough.

Pat

Patrick J. Lynett
Associate Professor
http://ceprofs.civil.tamu.edu/plynett

From: Eric [mailto:egeist@usgs.gov]
Sent: Wednesday, March 23, 2011 10:15 AM
To: Lynett, Patrick
Subject: DC + SIAM

Dear Pat,
Henry was asking about your Diablo Canyon visit below. I'm at the SIAM Geosciences meeting this week -- nice citation of your past work in some of the CFD talks...Eric

Begin forwarded message:

From: "Jones, Henry" <Henry.Jones@nrc.gov>
Date: March 22, 2011 11:17:31 AM PDT
To: Eric <egeist@usgs.gov>

Subject: RE: Yesterday's presentaion

Last week, I provided some anticipated answers for a televised NRC meeting of our Chief of Staff and Commissioners. The big presentation is tomorrow afternoon. I finally figured out how to make the animations work in PowerPoint and now I am go to go :)

Thanks again to USGS for your support. The animations and maps are excellent!

By the way, any word from Pat regarding Diablo Canyon?

Henry

-----Original Message-----
From: Eric [mailto:egeist@usgs.gov]
Sent: Tuesday, March 22, 2011 12:57 PM
To: Jones, Henry
Subject: Yesterday's presentaion

Dear Henry,
Just curious -- how did yesterday's presentation go? ...Eric

From: Flanders, Scott
To: Chokshi, Nilesh; Jones, Henry; Seber, Dogan; Wang, Weijun
Cc: Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject: RE: Kudos
Date: Thursday, March 24, 2011 12:00:00 PM

Yes, a tremendous by all three of you. I heard very positive feedback from several people.

Scott

From: Chokshi, Nilesh
Sent: Wednesday, March 23, 2011 4:58 PM
To: Jones, Henry; Seber, Dogan; Wang, Weijun
Cc: Flanders, Scott; Raione, Richard; Cook, Christopher; Karas, Rebecca
Subject: Kudos

Great presentations! I have already received requests to have your presentations available to other staff members. Let's think about how we do that, given we have some plant-specific information.

From:	Flanders, Scott
To:	Akstulewicz, Frank
Cc:	Lauron, Carolyn; Snyder, Amy
Subject:	RE: monthly report
Date:	Thursday, March 24, 2011 11:42:00 AM

I just provided my comments to Carolyn. I had several comments that I feel must be incorporated. We can discuss.

Scott

From: Akstulewicz, Frank
Sent: Wednesday, March 23, 2011 4:15 PM
To: Flanders, Scott
Subject: monthly report

Scott

We have the final version of the March monthly report ready to go to Michael. Needs to be there tomorrow. Are we waiting for input from DSER or can we send on.

From:	RobinsonII, Richard on behalf of Coffin, Stephanie
To:	NRO Division Directors; NRO Deputy Division Directors; Kokajko, Lawrence; Mohseni, Aby; Davis, Jack; Norato, Michael; Ray, Neil; DeMarco, Deborah; Zaki, Tarek; Scott, Michael; Elkins, Scott; Gibson, Kathy; Jackson, Rolonda; Coffin, Stephanie; Karas, Rebecca
Cc:	Akstulewicz, Frank; Matthews, David; Schum, Constance; Donoghue, Joseph; Flanders, Scott; Cook, Christopher; Roach, Edward; Junge, Michael; Budhi Sagar; Wesley Patrick; Todd Mintz; John Stamatkos; Gordon Wittmeyer; Sitakanta Mohanty; Patrick Mackin; Magruder, Stewart; Reckley, William
Subject:	Center For Nuclear Waste Regulatory Analysis (CENTER) Presentation to NRO Regarding Providing Technical Assistance in the Advanced Reactor program.
Attachments:	CNWRA Presentation 3-24-11 Rev 1 (2).pdf

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: TWFN-T7A01

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

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

Please see the attached presentation slides for this afternoon's meeting

When: Thursday, March 24, 2011 1:30 PM-2:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: NRO - TWFN - 07A-01

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

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

POP

Purpose: Discuss NRO's technical assistance requirements in the Advanced Reactor program area. Center manager's will provide information on capabilities/skills/disciplines available to NRC to support the NRO staff.

Outcome: Mutual understanding of the NRO's needs and possible Center assistance in supporting NRO. Discuss path forward (e.g., visit to SwRI/Center by NRO technical staff and manager's possible laboratory tours).

Process: Brief discussion of NRO's needs and Center's capabilities/disciplines available. NRO question and answer session.

Center for Nuclear Waste Regulatory Analyses
Support to the U.S. Nuclear Regulatory Commission
Office of New Reactors

Licensing of Integral Pressurized Water Reactors

March 24, 2011

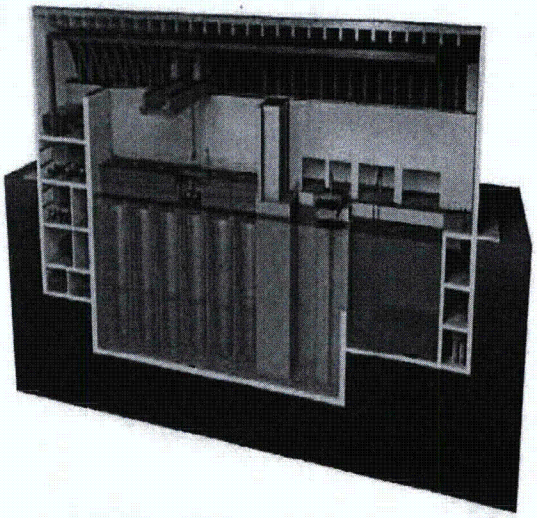
Southwest Research Institute

Presentation Overview

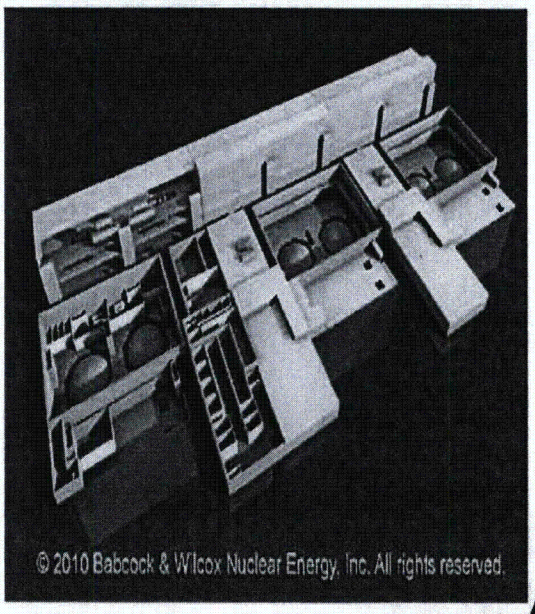
- Source documents
  - RIS 2011-02
  - SECY–10–0034
  - NUREG–0800 Sections
  - 10 CFR Part 52
  - 10 CFR Part 50
- Areas of focus
  - Aircraft impact (slides 3–5)
  - Fire events (slides 6–8)
  - Flooding/water infiltration (slides 9–11)
  - Seismic analysis (slides 12–14)
  - Structural analysis (slides 15–17)
  - Nondestructive evaluation (slides 18–20)

Potential Issues Aircraft Impact Analysis

Cross-sectional view of 6 modules



- Reactors and subsystems below grade presents unique challenges
  - Lower profile would reduce impact frequency
  - Structural effects of impact different than traditional NPPs (i.e., impact angle)
  - If impact occurs near structure, need to assess the force-load transfer from ground impact to structure
- Smaller radionuclide inventory per reactor basis, but a potential for more reactors in a small footprint
- NuScale: water filled reactor pool is shared between reactors with bioshield covering and spent fuel pool in same structure

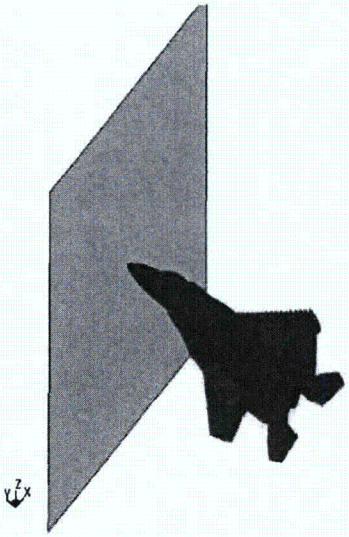


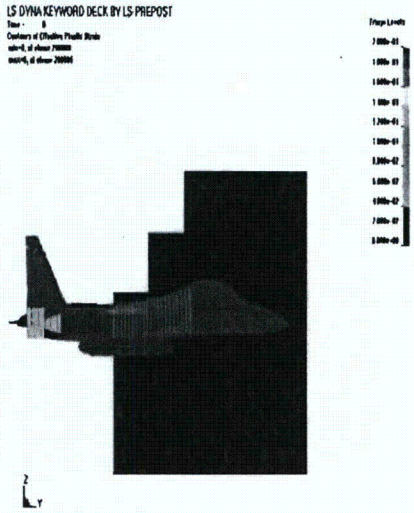
Approaches to Evaluating Potential Aircraft Crash Impacts

- U.S. Nuclear Regulatory Commission (NRC) regulations require safety review of nuclear facilities license applications for aircraft crash hazards
- Perform review to ensure applications meets 10 CFR 52.47 and applicable 10 CFR 50.150 requirements
- Analyze
  - Impact and displacement of bioshield and water in reactor cooling pool
  - Potential for jet fuel to enter reactor cooling pool and affect intended functions
  - Possible structural damage to facility from nearby ground impact
  - Potential for loss of all onsite power (station blackout)

Experience and Expertise

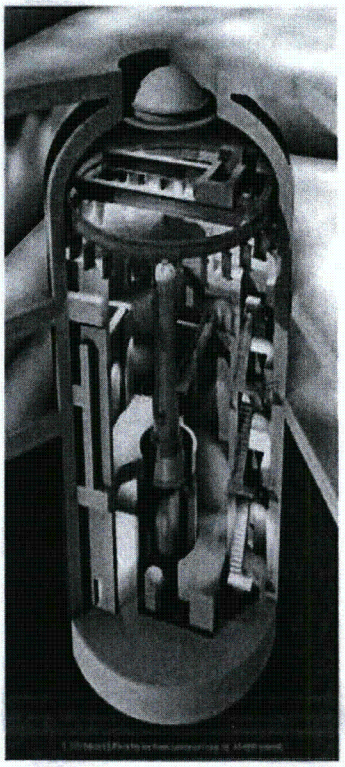
- Assessed aircraft crash frequency and developed safety evaluation report for Yucca Mountain, ISFSIs (Private Fuel Storage, Diablo Canyon, Humboldt Bay, Idaho Spent Fuel), Pa'ina Hawaii Irradiator Facility
- Developed finite element models of aircraft impact on concrete structures in support of Yucca Mountain license application review





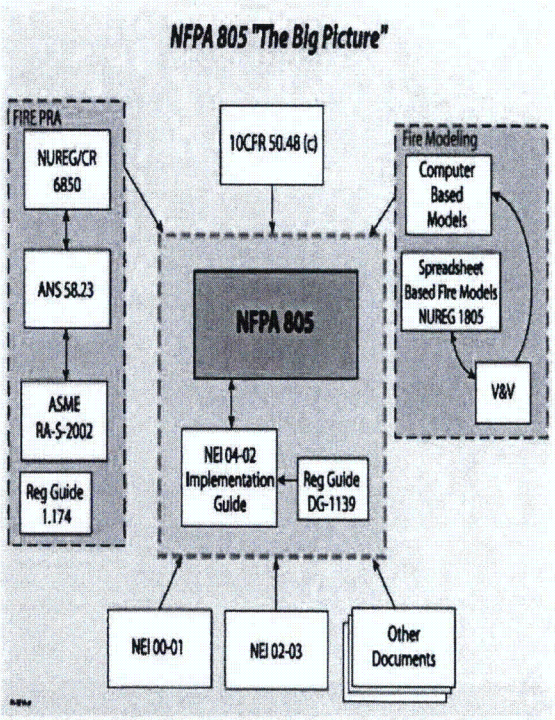
Potential Fire and Explosion Hazards

- Facility below-grade presents unique challenges
  - Smoke/fire behavior
  - Providing life safety
  - Design and operation of HVAC system
  - Removal of waste water
- Facility may be in remote location
  - Need to consider forest fires
  - Adequacy of water and resources needed for fire protection
  - Onsite personnel versus offsite emergency first responders
- NuScale:
  - Connected spent fuel pool and containment cooling pool
- New standard NFPA–805 departs from deterministic models and relies on probabilistic risk assessment (PRA)



Approaches to Address Potential Fire and Explosion Hazards

- Reviews based on RG 1.189
  - 10 CFR 50.48(a)(4) - description and analysis of the fire protection design features
  - NFPA 805 approach requires expertise in fire analysis, general probabilistic risk assessment and plant systems analysis, human reliability analysis (HRA), and electrical analysis



Experience and Expertise

- Provided expertise to support NRC licensing reviews
  - Yucca Mountain Repository, Nevada; Diablo Canyon ISFSI, California; Idaho Spent Fuel Facility, Idaho; Humboldt Bay ISFSI, California
  - Private Fuel Storage Facility, Utah; effects of propane tank release including vapor cloud explosions and Wild fire/ range fire assessment (ignition frequency and damage potential assessment)

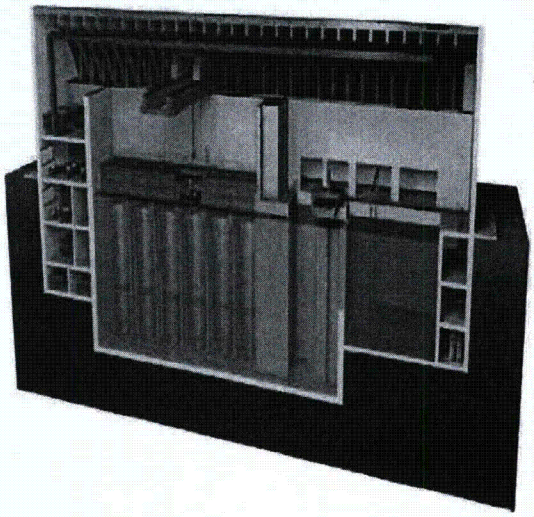
- Performed independent fire analysis to support SFST on identifying risk of transportation of spent nuclear fuel
  - Effects of diesel pool fire (locomotive; tanker truck)
  - Analyzed road and rail accidents to identify frequency of severe accidents

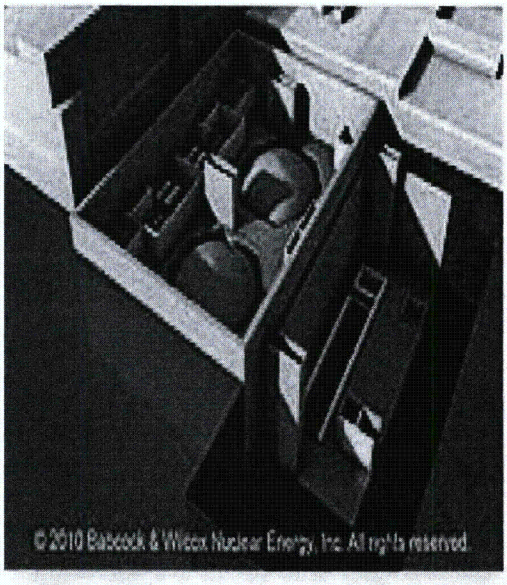
Potential Flooding Hazards

- Reactors and subsystems below grade
  - Hurricane storm surge
  - Tsunami runup
  - Water infiltration into structure

- NuScale:
  - Water displacement of bioshield or near-neutrally buoyant reactor vessel
  - Control room is below grade
  - Water infiltration could contaminate reactor cooling pool water (also introduce debris)

Cross-sectional view of 6 modules





http://www.babcock.com/products/modular_nuclear/

Approaches to Evaluating Flooding Hazards

- Application reviews based on RG 1.59 and SRP Section 2.4.2
- Examine both most severe and less severe flood conditions
  - Both static and dynamic conditions
  - Consistent with the initiating event consistent with 10 CFR Part 100 Appendix A
- Evaluate how various probable maximum flood levels would affect safety-related structures, systems, and components
  - Forces required to displace bioshield, reactor vessel
  - Debris deposition
  - Model water ingress of substructures
- Examine any proposed drainage systems, including grading to drain local intense precipitation away from safety-related structures, systems, and components

Experience and Expertise

- Assessed flooding analyses and developed safety evaluation report for MOX Construction Authorizations Request National Enrichment Facility, AREVA Eagle Rock Enrichment Facility, Private Fuel Storage Facility, GE Hitachi Global Laser Enrichment Facility
- Developed independent site-scale groundwater flow and transport models for Yucca Mountain region
- Reviewed license application for Pa'ina irradiator and performed independent analysis to consider tsunami and hurricane flooding
- Developed methodology for simulating landslide generated tsunami for application in risk mitigation and hazard management

Seismic and Faulting Hazards

- Facilities may be located in more diverse geological settings with high seismic hazard
  - Charleston
  - Eastern Tennessee
  - New Madrid
  - Intermountain west
  - San Andreas/Cascadia
  - Alaska
- Below grade facilities presents unique challenges
  - Site response different than above ground structures
  - Liquifaction and direct fault disruption hazards may be enhanced
- Complex soil-structure interactions

Approaches to Evaluating Seismic and Faulting Hazards

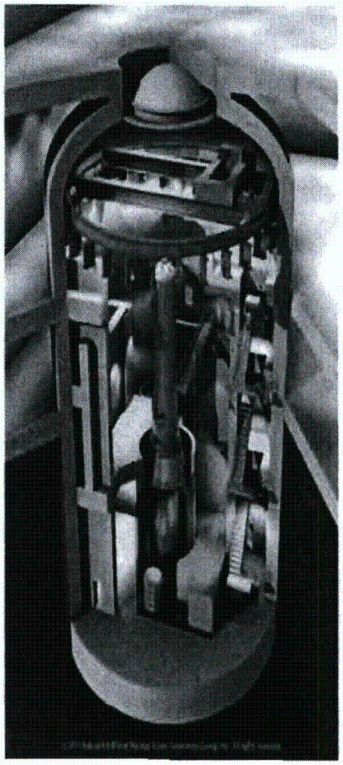
- Site reviews based on RG 1.208
  - Site-specific or regional seismic investigations
  - Seismic source characterization
  - Probabilistic seismic hazard assessment (PSHA)
  - Deaggregation of mean PSHA Hazard for controlling earthquakes and distances
  - Ground motion attenuation (far field and site response)
  - Site-specific ground motion response spectra consistent with 10 CFR Part 100.23
  - Development of SSE consistent with Appendix S of 10 CFR Part 50
  - Evaluation of potential for direct fault displacement, including methods in NUREG/CR-5562, Regulatory Guide 1.132, and NUREG/CR-5503
  - Evaluate liquefaction potential per RG 1.198
- Additional sensitivity studies to assess uncertainty in PSHA and site response, if needed

Experience and Expertise

- Provided NRC with safety analysis for facilities across the U.S. including high seismic areas (Savannah River, Paducah, Yucca Mountain, Skull Valley, Diablo Canyon, and Humboldt Bay)
- Developed staff guidance to conduct seismic margin analysis assessment for Yucca Mountain review (HLWRS–ISG–01)
- Developed and implemented tools to conduct a review of the Yucca Mountain seismic event sequence analyses
- Reanalyzed slope stability for all uranium tailings piles under new earthquake ground motion conditions for the Western US
- Conducted independent studies of seismic source characteristics in support of ASLB hearings
  - Detailed review of paleoliquefaction data at Savannah to assess alternative recurrence models for the Charlestown earthquake
  - Alterative fault source models for private fuel storage site at Skull Valley, Utah
  - Assessment of GPS strain-rate data on Yucca Mountain PSHA

Potential Structural Analysis Issues for iPWRs

- Below grade facility presents unique challenges
  - Dynamic soil-structure interaction of below grade shear wall and foundation system
  - Seismic stability of the media surrounding the structure
- NuScale:
  - Reaction of neutrally buoyant reactor/containment vessel
  - Seismic restraints and dampening

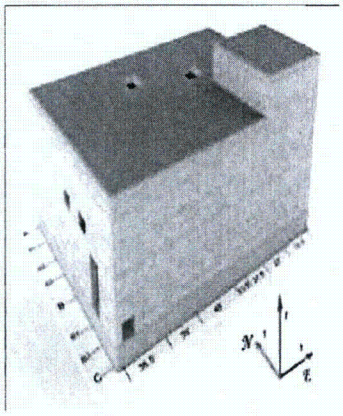


Approaches to Structural Analysis

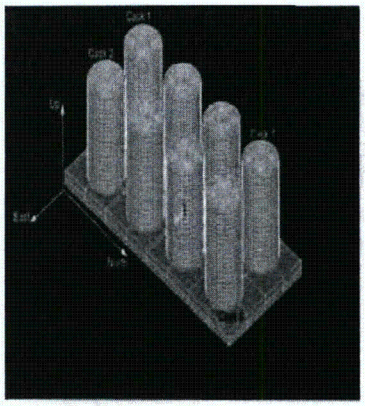
- Detailed safety evaluation of structural components per NRC Regulatory Guides 1.94 and 1.216 and NUREG–0800 chapter 3
- 3-D dynamic soil-structure interaction
  - LS-DYNA 960, SASSI, SAP2000
- 3-D dynamic analysis of the interaction of the structure and seismic dampening system
- Support on-site inspections in areas of expertise (e.g., reinforced concrete columns, shear walls, steel columns, and foundations)

Experience and Expertise

- Assessed structural analyses and developed safety evaluation report for the Louisiana Energy Services National Enrichment Facility, American Centrifuge, International Isotopes, and the MOX Fuel Fabrication Facility, Yucca Mountain
- Supported ISFSI licensing providing 3-D independent assessment of SSI for cask fuel storage to show cask remained upright (ABAQUS)
- Evaluated potential for direct fault disruption and safe set-back distances for Yucca Mountain



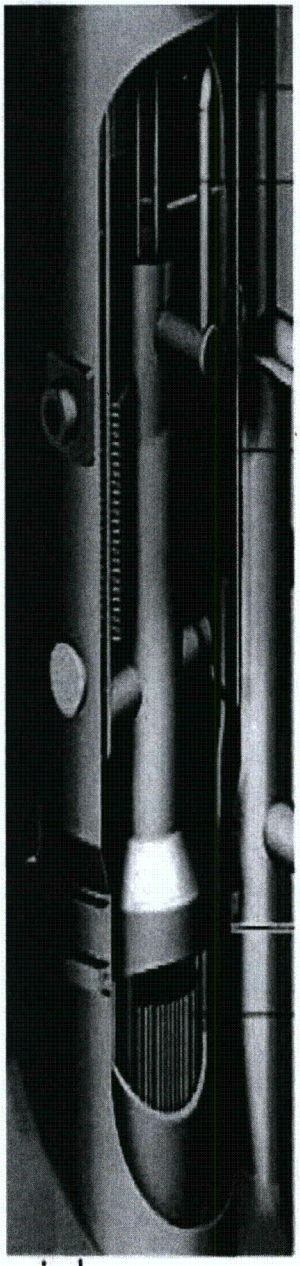
Soil-Structure Interaction SASSI model for Canister Transfer Building



Soil-Structure Interaction Model for Cask Fuel Storage Design Tested for Design-Basis Earthquake

Potential Issues for Nondestructive Evaluation of iPWRs

- Limited access to pressure vessel and components (physical/ radiation)
  - Welds, steam generator, bolted connections, CRD mechanisms, and valves
- Greater reliance on containment barriers
  - Higher performance of containment welds
  - Greater reliance on flanged connections in the primary pressure boundary
- NuScale:
  - Containment is completely under water
  - Normal and accident condition operation depends highly on proper operation of valves around the RPV
  - 73.2 ft. of tubing in helical steam generator (≈1000 tubes), internal to reactor vessel, tubes in compression instead of tension
- mPower:
  - Decreased inspection opportunity due to extended refueling period
  - Active components (pumps) inside reactor vessel



Approach to Evaluating Issues with Nondestructive Evaluation

- Ensuring Multiple Fission Barrier Integrity
  - RPV weld inspection likely similar to existing boiling water reactor plants
  - Ensure designs provide sufficient access to all components requiring in-service inspection as part of the licensing process
  - Assess radiation environment of components requiring inspection (i.e., can all inspections be done with components away from fuel?)
  - Evaluate frequency and requirements for periodic inspection of containment welds and bolting systems
  - Establish inspection requirements and techniques for RPV valves (NuScale)
  - Confirm performance of NDE systems for helical steam generator (NuScale)

Experience and Expertise

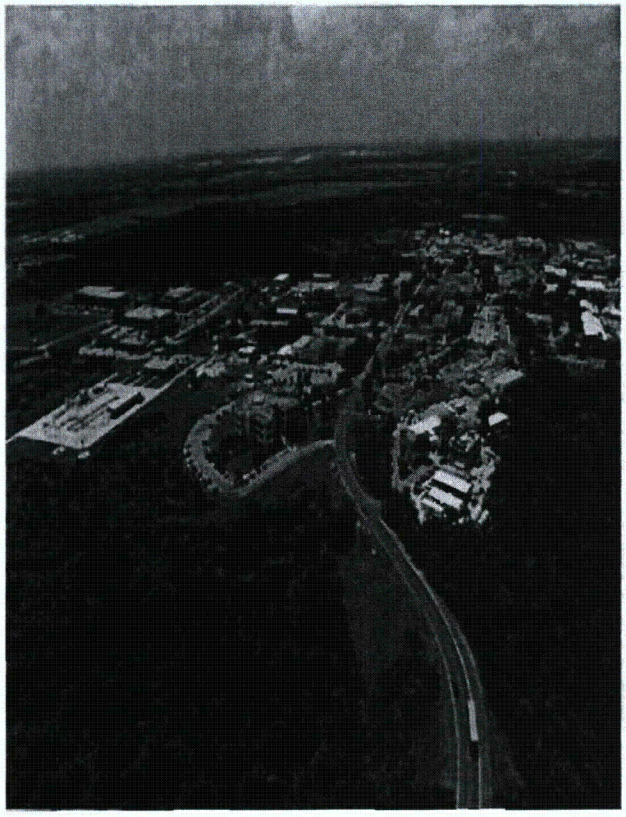
- Experience with nuclear power plant inspection techniques based on work on license renewal applications (NRR/DLR)
- Performed materials and corrosion testing to support design certification of fuel repository systems
- Materials development and evaluation experience
- Experience with monitoring probes and sensors that are applicable to modern reactor designs

Summary and Conclusions

- Extensive experience conducting safety evaluations on a broad range of nuclear facilities for the U.S. NRC
- More than two decades of regulatory experience
- Long-term, experienced technical staff
  - Wide range of technical expertise
  - Multi-discipline approach
- Worked within the project management structure and management procedures, including work in collaborative teams, used by the U.S. NRC to conduct licensing reviews
- Independent and free from conflict of interest

Backup Slides

Introduction to Southwest Research Institute



- Private, non-profit applied research and development organization
- Headquarters in San Antonio, TX
- 1,200 acre research grounds

- Organized in 12 operating divisions
- Expertise in essentially every area of engineering and physical sciences
- Nearly 2 million square feet of laboratories, test facilities, and offices

- Aerospace Electronics and Information Technology
- Applied Physics
- Applied Power
- Automation and Data Systems
- Chemistry and Chemical Engineering
- Engine, Emissions and Vehicle Research
- Fuels and Lubricants Research
- Geosciences and Engineering
- Mechanical Engineering
- Signal Exploitation and Geolocation
- Space Science and Engineering
- Training, Simulation, and Performance Improvement

Introduction to CNWRA

- Fall 1987: CNWRA established as a federally funded research and development center at SwRI, Supporting the NRC Commission
- 1992: CNWRA charter opened to pursue work for clients outside NRC
- 2005: CNWRA reorganized as a department within the Geosciences and Engineering (GED) Division
- Organization
  - Matrix management
  - Integrated across disciplines to effectively solve client problems

Primary Areas of Technical Expertise

- Civil Engineering
- Computer Sciences
- Fire analysis and fire protection engineering
- Geochemistry / Radiochemistry
- Geological Engineering
- Geophysics
- Health Physics
- Hydrology / Climatology
- Material Sciences and Corrosion
- Mechanical Engineering
- Mining Engineering
- Nuclear Engineering
- Performance and Risk Assessment
- Quality Assurance
- Rock Mechanics
- Structural engineering
- Structural Geology
- Volcanology

www.ged.swri.org

Current Scope of Activities

- A Federally Funded Research and Development Center; chartered to support NRC Nuclear Waste Policy Act activities
  - Full-service support to the High-Level Waste Repository Safety Program
  - Safety reviews and analyses in interim storage and transportation
  - Non-HLW determinations
- A source of technical assistance to NRC outside the CNWRA charter
  - Reactor licensing renewals
  - Sourced for NFPA-805 (work expected beginning summer 2011)
  - Environmental evaluations
  - Uranium recovery and processing
  - Decommissioning of nuclear materials facilities
  - Fuel cycle facilities; licensing reviews and integrated safety analyses
- A source of technical assistance for International Radioactive Waste Management Programs

Structural Analysis

- MOX Fuel Fabrication Facility
  - Assessment of disposition of engineering change requests (ECR), nonconformance reports (NCR), and condition reports (CR) on as-built design of reinforced concrete columns, shear walls, and foundations
    - Pre-inspection record review, on-site record review, licensee interview, plant walk-down, and input to inspection report
    - Findings on adequacy of disposition on reinforced concrete columns and shear walls, and partial use of controlled low strength material as foundation backfill of BMP, BAP, and BSR
    - Identification of noncompliance with NRC approved design, codes, and standards
    - Identification of inspection follow-up item (e.g., need for assessment of cumulating effects arising out of disposition of numerous ECRs, NCRs, and CRs)

Structural Analysis (continued)

- Louisiana Energy Services National Enrichment Facility
  - Assessment of disposition of engineering change requests (ECR), nonconformance reports (NCR), and request for information (RFI) on as-built design of reinforced concrete shear walls and slabs, steel columns, and foundations
    - Selection of ECR, NCR, and RFI related to as-built design of structures and foundations where significant changes exist between license application design and the as-built design
    - Pre-inspection record review, on-site record review, licensee interview, plant walk-down and remedial action confirmation, reinforcement placement and concrete pouring inspection, and input to inspection report
    - Findings on adequacy of disposition of reinforced concrete structural members, steel structural members, and footings of Separation Building Module (SBM) 1001 and Cylinder Receipt and Dispatch Building (CRDB) 1100
    - Design office record review for technical basis for license amendment request
    - Identification of Inspection Follow-up Item (IFI) (e.g., need for assessment of settlement and soil-structure interaction analysis)

Structural and Geotechnical Capabilities (continued)

- Uranium reclamation radon barrier soil cover construction inspection
  - Radon barrier cover compaction in accordance with industrial standards
  - Moisture content measurements
- Safety evaluation report preparation for FCSS and SFST licensed facilities (design bases, geotechnical site parameters, analysis and design methodologies, and structural and foundation design and analysis)
- Structural and geotechnical software validation
  - LS-DYNA 960, SAP2000, ProShake
- Prelicensing audit observation of repository facility
  - Soil-structure interaction
  - Seismic design

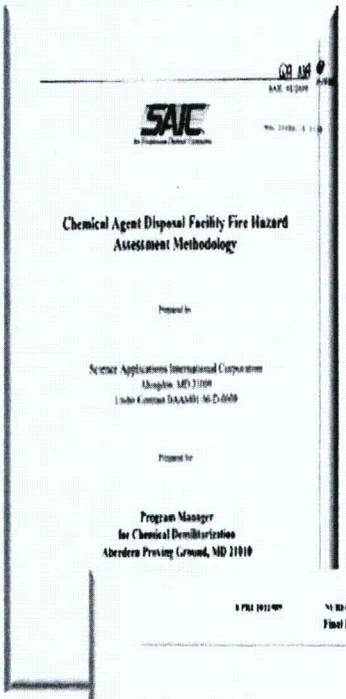
Experience and Capabilities: Fire/Explosion Hazard Assessment

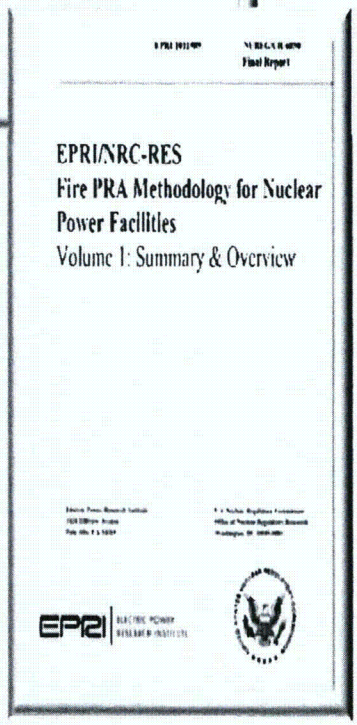
- Licensing experience
  - Yucca Mountain Repository, Nevada
  - Private Fuel Storage Facility, Utah
  - Diablo Canyon ISFSI, California
  - Idaho Spent Fuel Facility, Idaho
  - Humboldt Bay ISFSI, California
- Wild fire/range fire assessment
  - Ignition frequency and damage potential assessment
- Effects of diesel pool fire
  - Locomotive
  - Tanker truck
- Effects of propane tank release including vapor cloud explosions

Yucca Mountain Repository Fire Hazard Assessment

- Waste Handling Facilities fire initiating frequency
  - Chemical agent disposal facility fire hazard assessment methodology (Science Application International Corporation
  - Fire PRA methodology for nuclear power Facilities (EPRI/NRC-RES NUREG/CR–6850)
  - National Fire Protection Association (NFPA)
    - Structure fires in Radioactive Material Working Facilities and Nuclear Energy Plants of

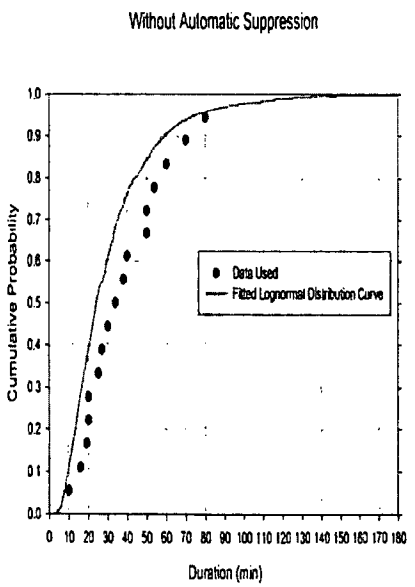
      noncombustible construction
    - Fires in or at industrial, chemical, hazardous chemical, and Plastic Manufacturing Facilities: 1988–1997 unallocated annual averages and narratives
- Effectiveness of fire protection systems





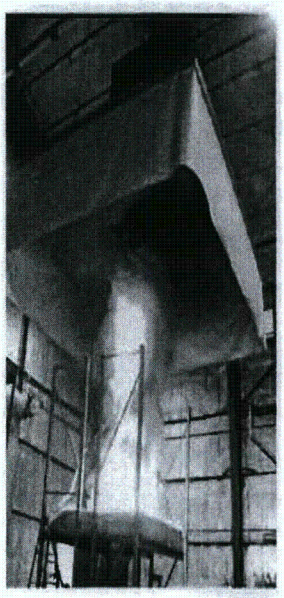
Fire Hazard Assessment: Yucca Mountain (continued)

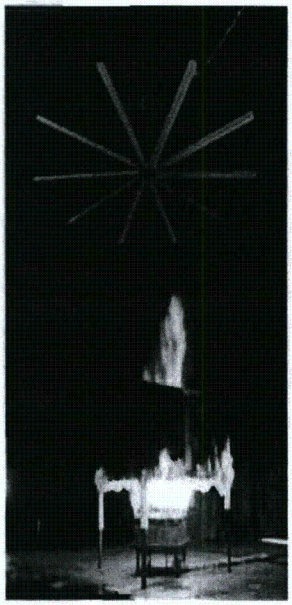
- Distribution of facility ignition frequency to rooms
  - Likelihood of a fire originating from a particular class of equipment (e.g., welders, motors, electrical equipment, etc.)
  - Scoring methodology
- Fire propagation probability
  - Historical information on fire propagation
  - Local fire ignition: fire within a room containing waste plus fire in surrounding room
  - Frequency of large fires
- Fire event sequence assessment
  - Fire severity in terms of duration and intensity uncertainties
  - Conditional probability of fire damaging waste package target



Capabilities: Fire Testing and Experimental Verification

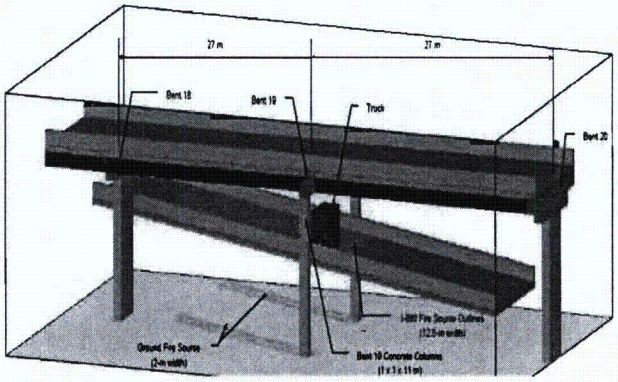
- Enhances confidence in findings
- Validation and verification exercise
- SwRI Fire Technology Department
  - Standard and non-standard testing
  - Customized testing
  - Indoor area for large-scale fires
  - Heat release rates in excess of 25 megawatts



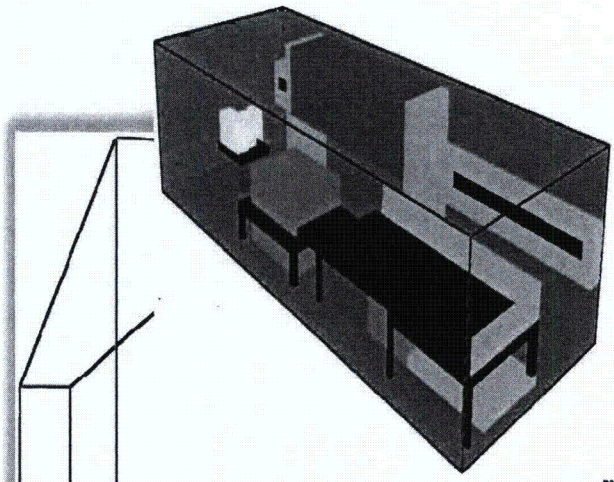


MacArthur Maze Fire: Modeling

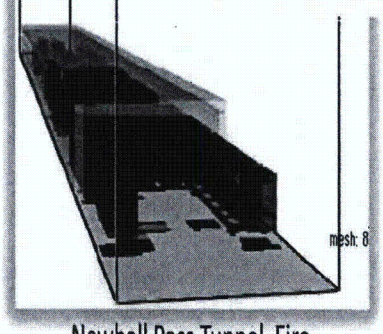
- Develop fire simulations to evaluate thermal conditions
- Knowledge of how geometry affects fire progression
- Understanding of intrinsic material properties used for fire modeling



MacArthur Maze Fire



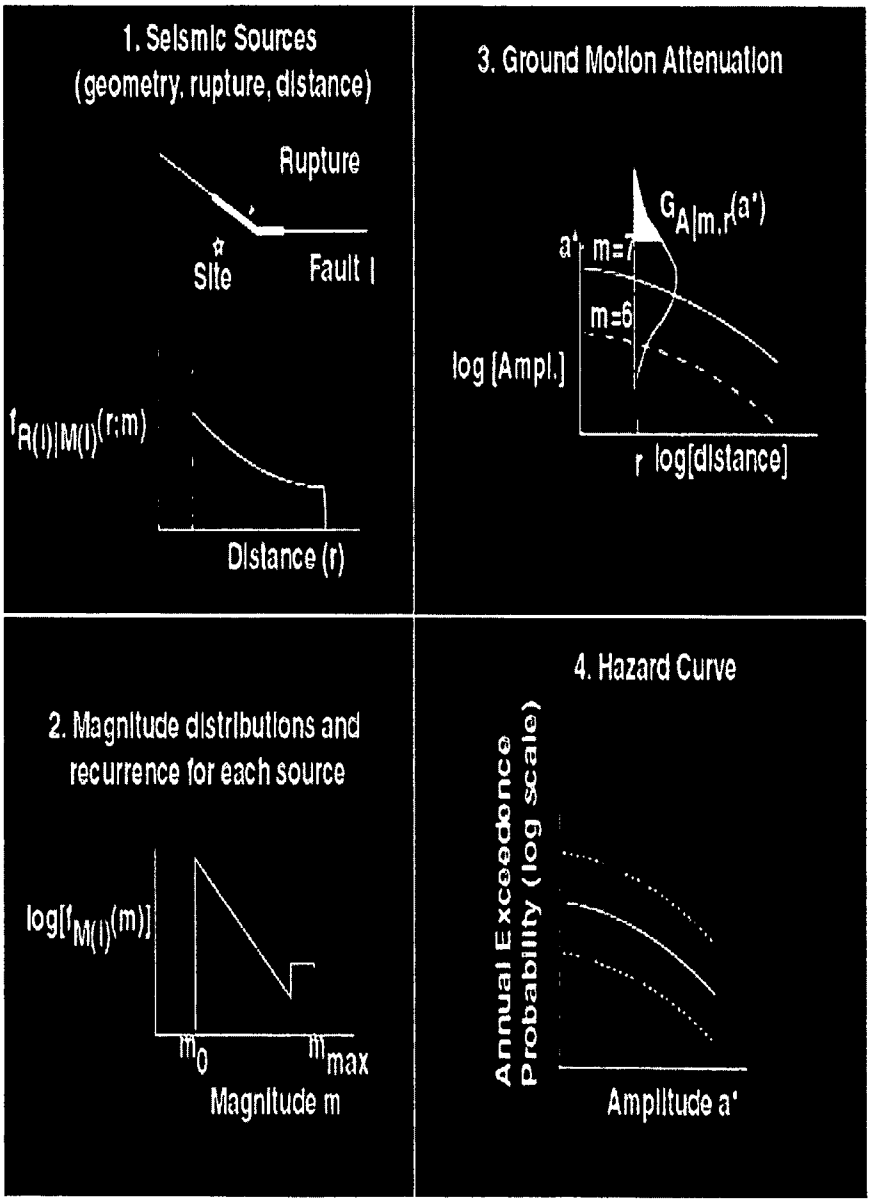
Renewed Fire Certification for Auditorium



Newhall Pass Tunnel Fire

Seismology: Probabilistic Seismic Hazard Assessment (PSHA) (SER 2.5)

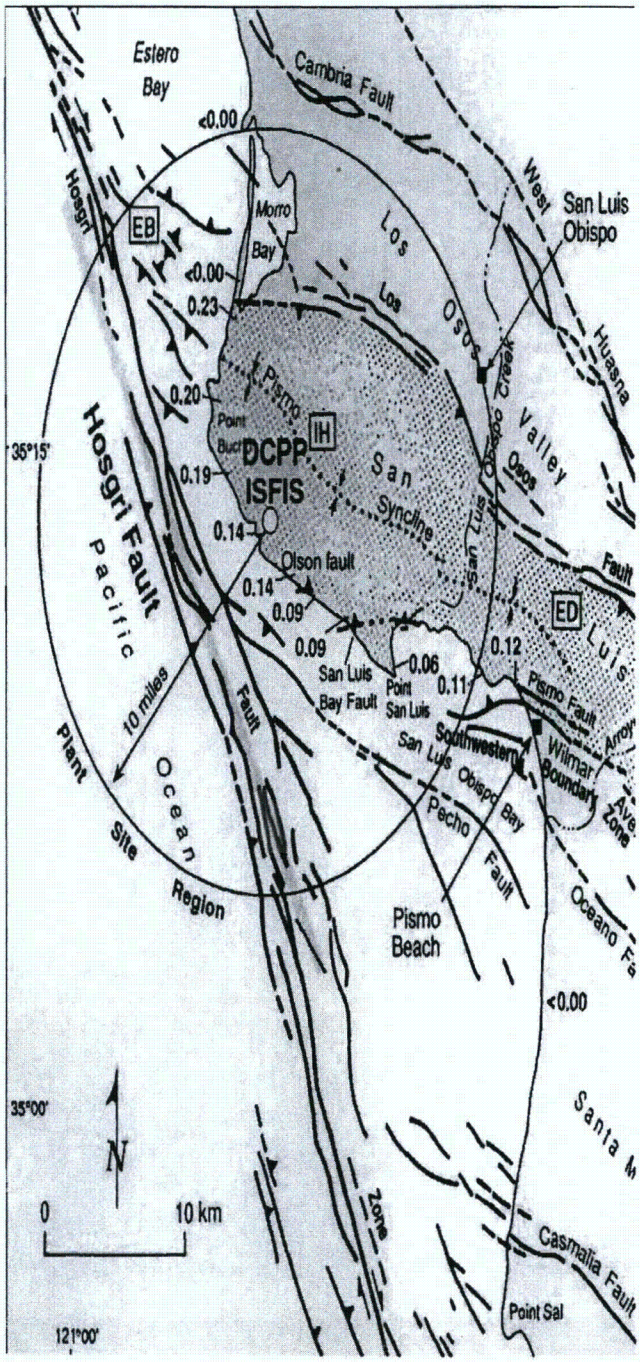
- Conducted and evaluated PSHA
  - PFS Facility
  - Idaho Spent Fuel Facility
  - Humboldt Bay ISFSI
  - Yucca Mountain Repository



Geology: Seismic Sources (SER 2.5)

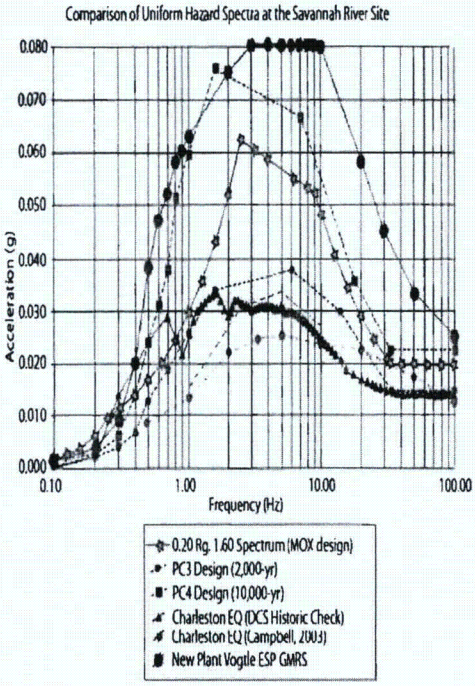
Licensing experience

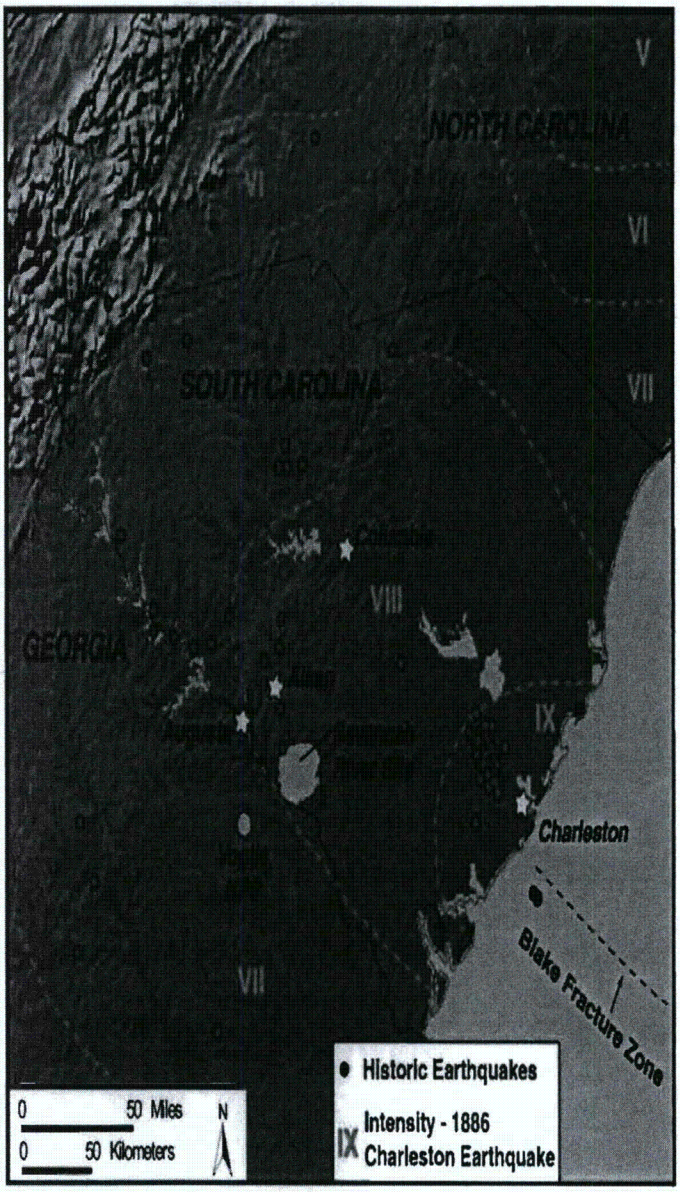
- Diablo Canyon ISFSI
- Three-Mile Island damaged fuel ISFSI
- PFS Facility
- Idaho Spent Fuel Facility
- Humboldt Bay ISFSI
- LES National Enrichment Facility
- USEC American Centrifuge Plant
- MOX Fuel Fabrication Facility
- GE-Hitachi Enrichment Facility
- AREVA Eagle Rock Enrichment
- Yucca Mountain Repository



Geology: CEUS Paleoliquefaction (SER 2.5)

- MOX fuel fabrication facility, Aiken, SC
  - Detailed review of paleoliquefaction data
  - Assessed recurrence models for the Charlestown earthquake





Ensuring Multiple Fission Barrier Integrity

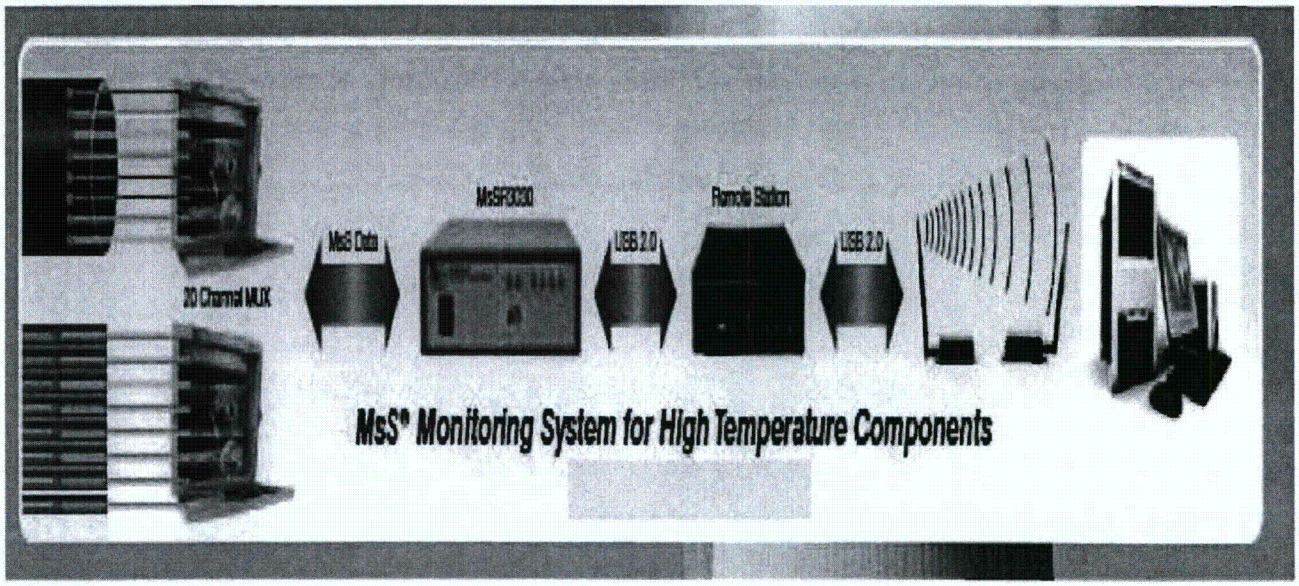
- RPV weld inspection requirements should be similar to existing BWR plants
- Performance of NDE systems for the helical tubing SG should be confirmed
- Higher performance required of containment means that periodic inspections of the containment welds may be required
- Greater reliance on flanged connections in the primary pressure boundary means that periodic inspection of bolting systems will be required
- Normal and accident condition operation depends highly on proper operation of valves around the RPV – inspection requirements and techniques must be established

Access Engineering

- Sufficient access to all components requiring in-service inspection should be ensured as part of the licensing process
- Radiation environment of components requiring inspection should also be examined (i.e., can all inspections be done with components away from fuel?)

Alternative to Periodic ISI

- Division 18 Sensor Systems and NDE Technology of SwRI are evaluating permanently placed sensors on the vessels to monitor various geometries using phased sensor technologies
- Sensors can potentially be placed around the RPV and at critical flanged connections



Development Work

- SwRI is presently
  - Developing monitoring probe technology
  - Developing multiplexed, multiprobe data acquisition, imaging, and analysis technology and associated algorithms to allow automated analysis for certain applications
- Need to evaluate location of probes to insure adequate inspection/monitoring data
- Need to evaluate periodicity of probe data acquisition
- Need to develop algorithms for automated analysis of other pertinent applications

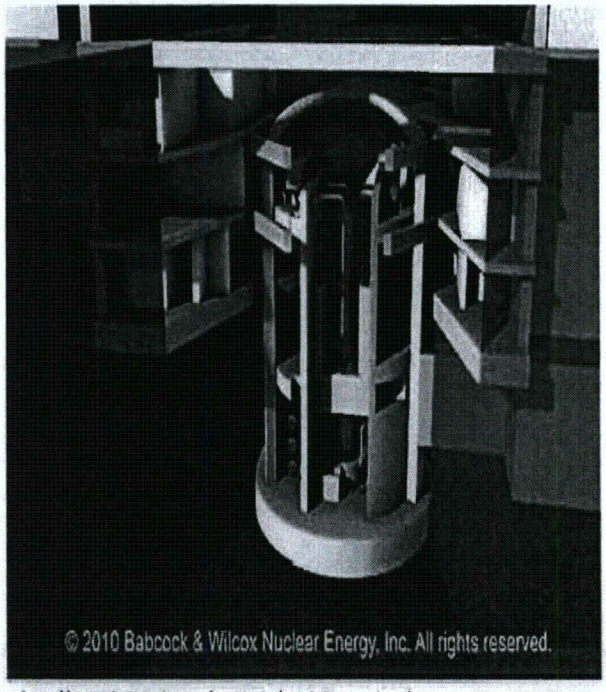
NUREG–0800 Sections

- Plant Description
- Site Characteristics
- Design of SSC&E
- Reactor
- Reactor Coolant System
- Engineered Safety Features
- Instrumentation & Controls
- Electric Power
- Auxiliary Systems
- Steam & Power Conversion
- Radioactive Waste Management
- Radiation Protection
- Conduct of Operations
- Initial Test Program & ITAAC
- Accident Analysis
- Technical Specs.
- QA
- Human Factors Engineering
- Severe Accidents

Babcock & Wilcox mPower™ Reactor

B&W mPower™ - Basic Design

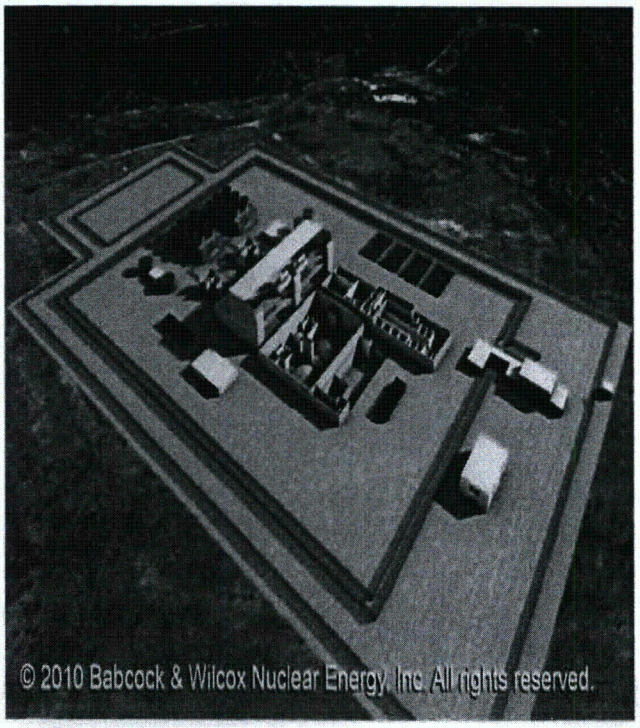
- A pressurized water reactor with the reactor core, steam generator, pressurizer, control rod drive mechanism (CRDMs) and reactor coolant pumps are combined into a common pressure vessel (no large-pipe LOCA)
- Modular: multi-unit plant from 1 to 10+ reactors
- Containment: underground



http://www.babcock.com/products/modular_nuclear/

B&W mPower™ - Basic Design

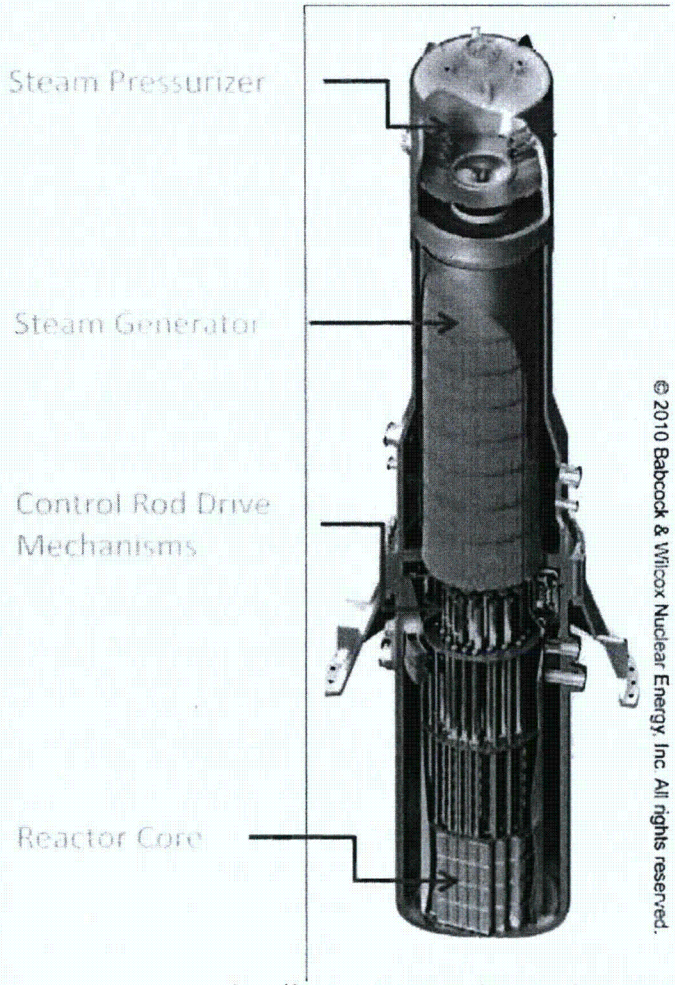
- North American shop-manufactured
  - U.S. and Canadian facilities
- 3 year construction cycle
- No on-site nuclear steam supply system (NSSS) construction
- Rail-shippable NSSS



http://www.babcock.com/products/modular_nuclear/

B&W mPower™ - Basic Design

Reactor Power	125 MWe; 425 MW(th)
Coolant	Light Water
Fuel Design	Standard PWR fuel; Uses Integral and Non-Integral Poisons
Coolant Inlet Temperature	568.4°F
Coolant Outlet Temperature	609°F
Steam Pressurizer Operating Pressure	1900 psi
Core Mass Flow Rate	25.4 Mlbm/hr
Design Life	60 years
Refueling	4+ years



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http://www.babcock.com/products/modular_nuclear/

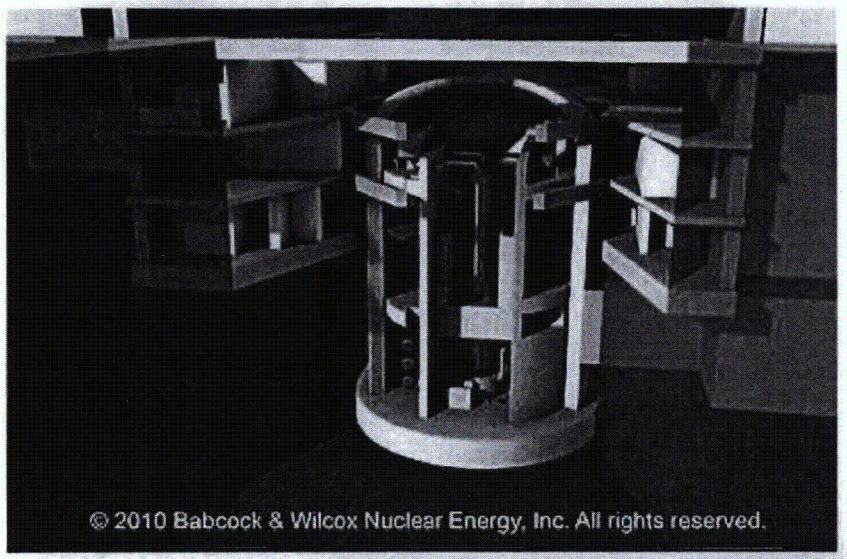
B&W mPower™ - Basic Design

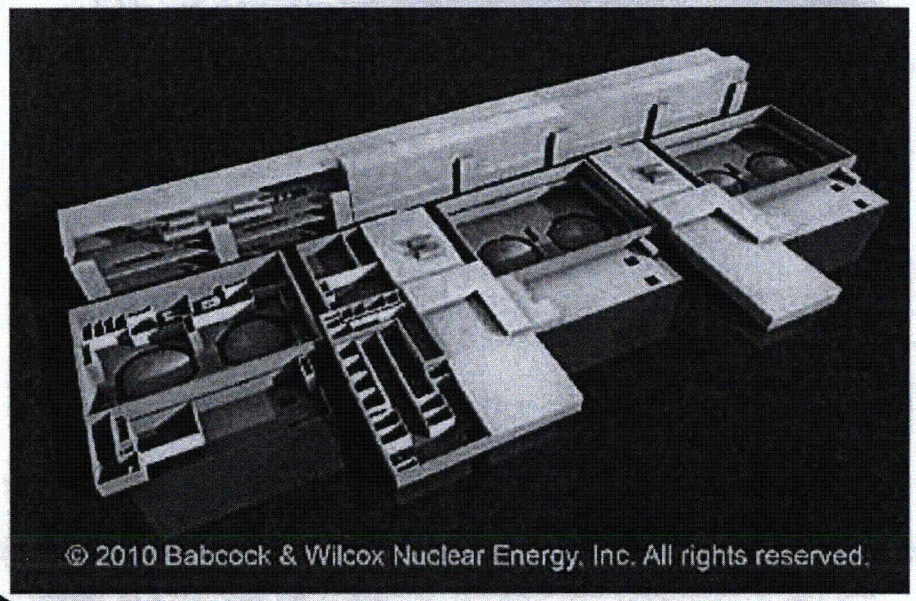
- Uses PWR fuel (17x17 pin array)
  - UO_2 pellets enriched to 4.95 wt%
  - Fuel rod clad: zircaloy-4
- Reactor has a 4+ year operating cycle between refueling
  - Single cycle for fuel, reaches design discharge burnup requirements of 36 GWd/MTU
  - Design has spent fuel storage capacity for life of the reactor (60 year design life)

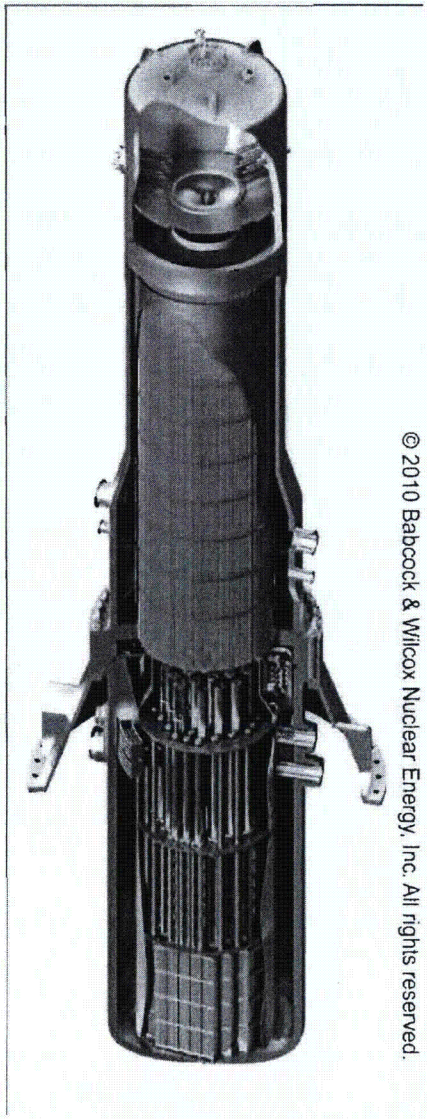
B&W mPower™ - Basic Design

- Controlling Excess Reactivity
  - To control excess reactivity uses
    - Nonintegral burnable poison rods (BPR) [Al_2O_3-B_4C, 1 to 8 wt%]
    - Integral fuel burnable poison rods (FBPR) [Fuel rods, U-235 enrichment at 3.95 wt% and Gd_2O_3 at 3 wt%]
  - Control rod sequences are changed periodically in order to re-distribute and flatten core power and burn profiles
    - The use of Poisons and displacement of water results in harder spectrum produces more Pu

Images from B& W site:
http://www.babcock.com/products/modular_nuclear/







Images from B& W site:
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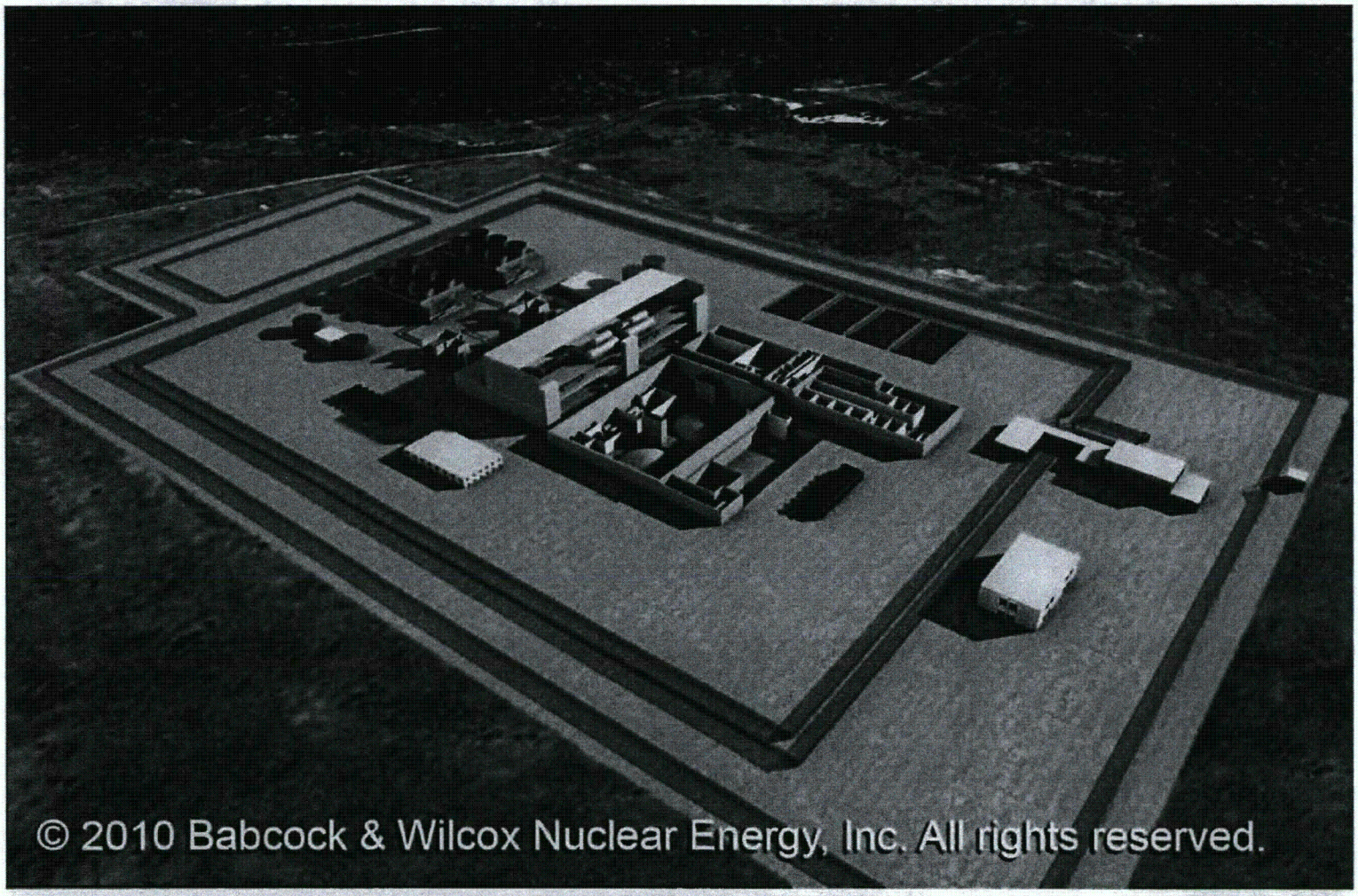


NuScale Modular Reactor

Overview

Plant Characteristics

Power Generation Module

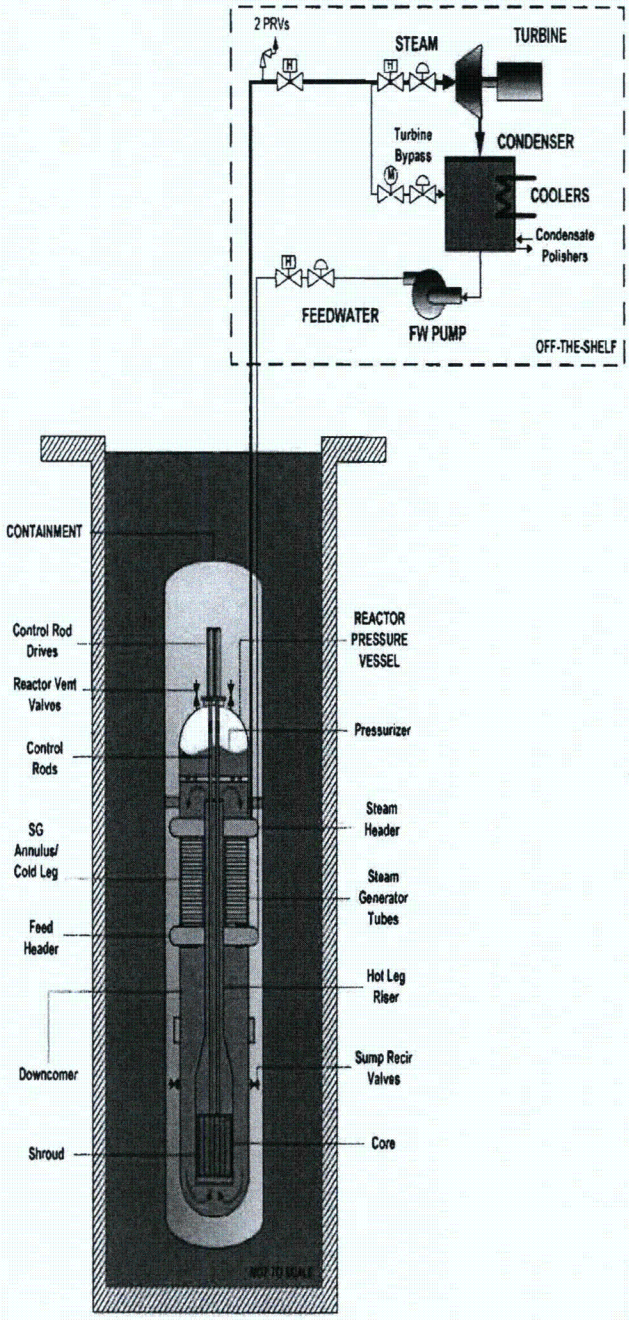
•Reactor Type	PWR
•Electrical Output	45 MWe
•Steam Generator Number	Two independent tube bundles
•Steam Generator Type	Vertical, once-through, helical tubes
•Steam Generator Tube Number	~1000
•Steam Cycle	Superheated
•Turbine Type	3600 rpm, single pressure
•Steam Flow	56.1 kg/s (445,000 lb/hr)

Reactor

•Thermal Power	150 MWt
•Reactor Pressure and Core Exit Temperature	P < 10.4 MPa (1500 psig), 575 K (575 F)
•Primary Coolant Mass Flow Rate	~600 kg/s (4.76E6 lb/hr)
•Fuel	24 -17x17 fuel bundles, half height, UO_2, 4.95% enriched
•Refueling Intervals	24 months

System Design

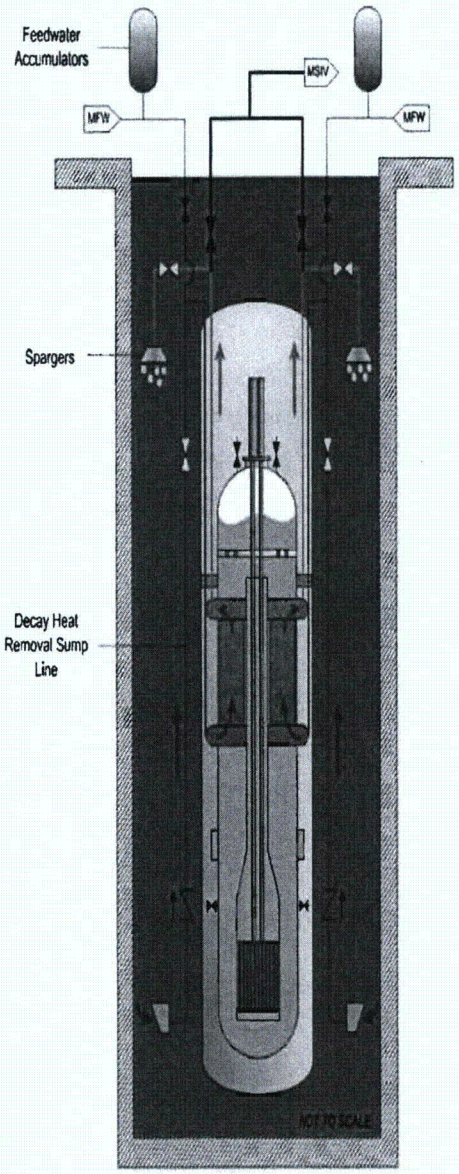
- Light water reactor design
- Integrated containment vessel and reactor system (60' x 14' Dia.)
- Containment vessel submerged in water below ground level
- Passive cooling system uses natural circulation/convection for coolant flow
- Passive safety systems (each capable of 7 percent decay heat removal)
- Decay heat removal system (DHRS)
- Containment heat removal system (CHRS)
- COTS turbine-generator set
- 1 to 24 units (45—1,080 MWe) per facility



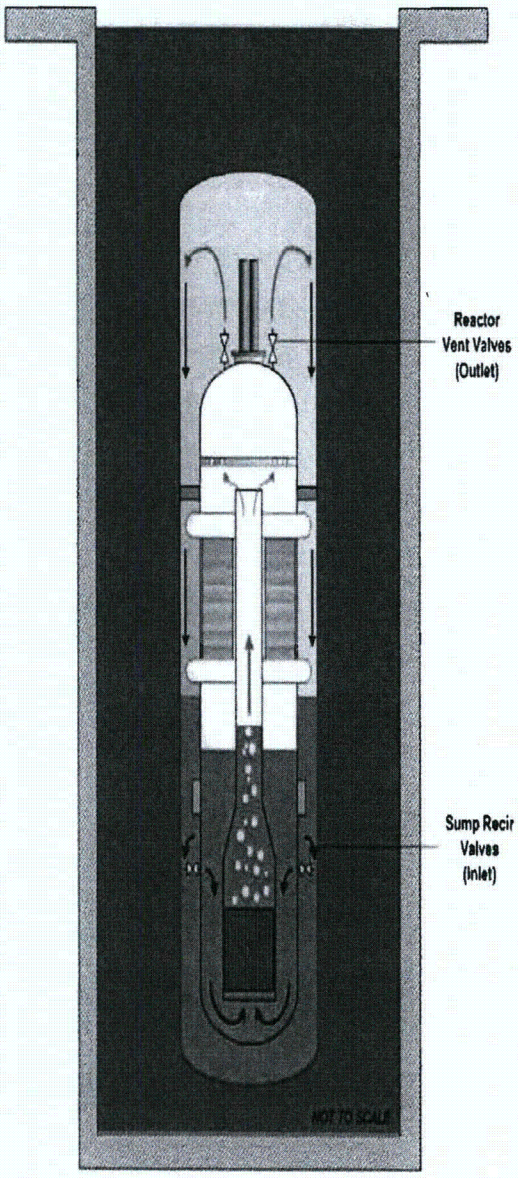
Reactor Vessel Design

- 9 ft OD , 45 ft long
- 3.0 in carbon steel vessel with internal stainless steel liner
- Vacuum between containment and reactor vessels
- Operating pressure: <10.4 MPa (1,500 psig)
- Natural circulation flow (no pumps)
- Steam Generator
  - Two independent helical coil tube bundles
  - Two feed water inlets
  - Two main steam outlets
- Core shroud and riser
- Four CRDMs/16 control rod clusters
- Two reactor vent valves
- Two sump valves
- One flange location

Reactor Vessel Safety



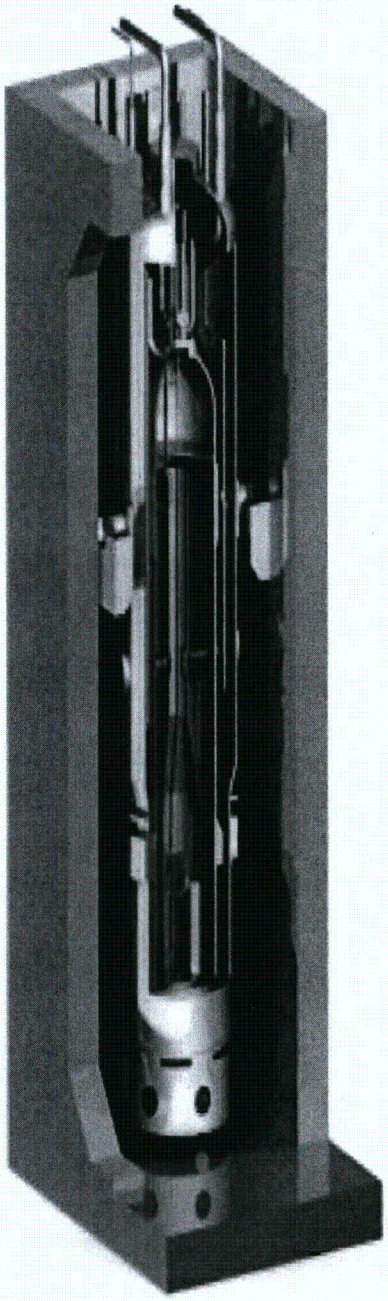
Decay Heat Removal System



Containment Heat Removal System

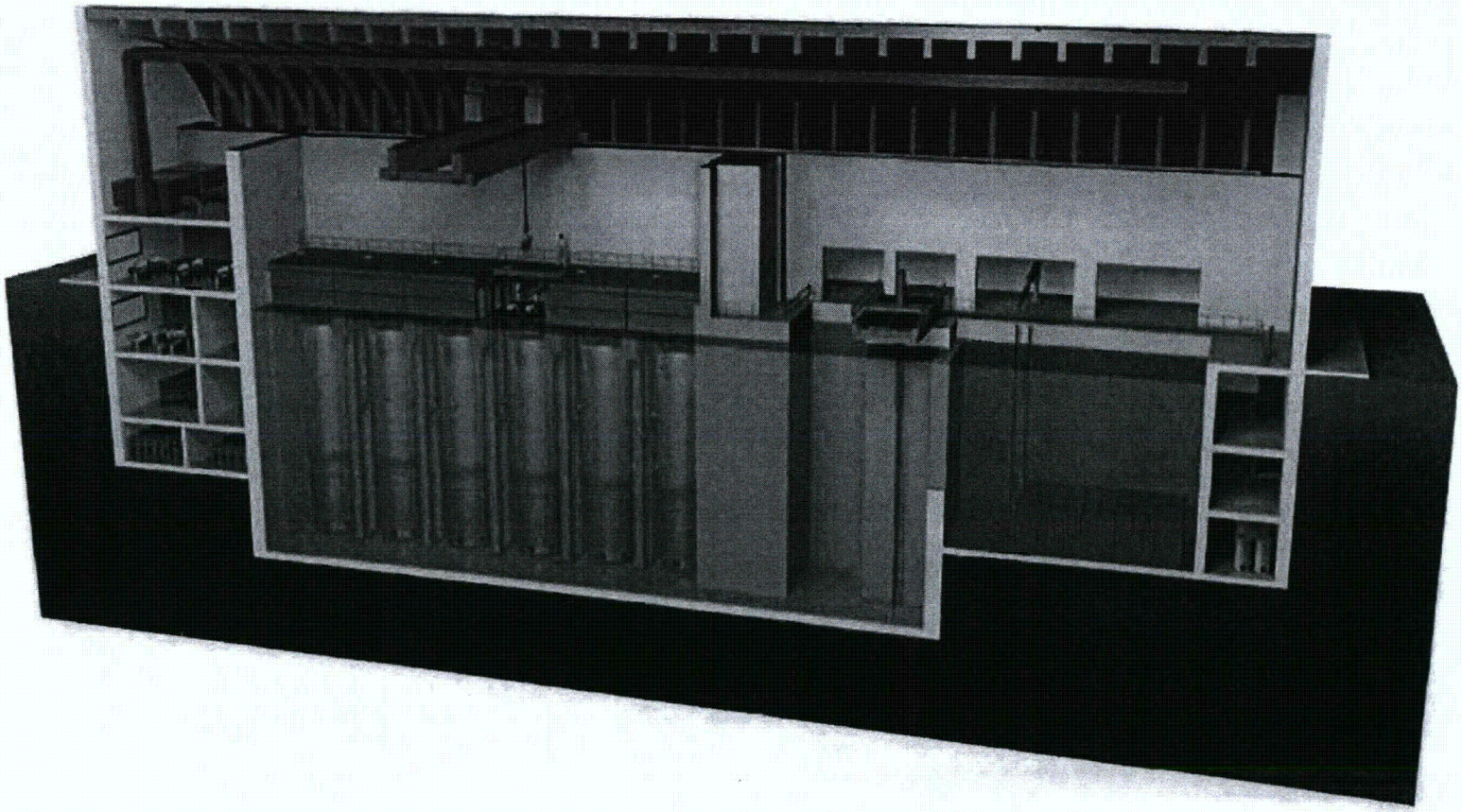
Materials

- Carbon steel containment
- Carbon steel vessel, stainless steel lined
- Standard PWR-type fuel (half-height)
- Stainless steel/Inconel steam generators



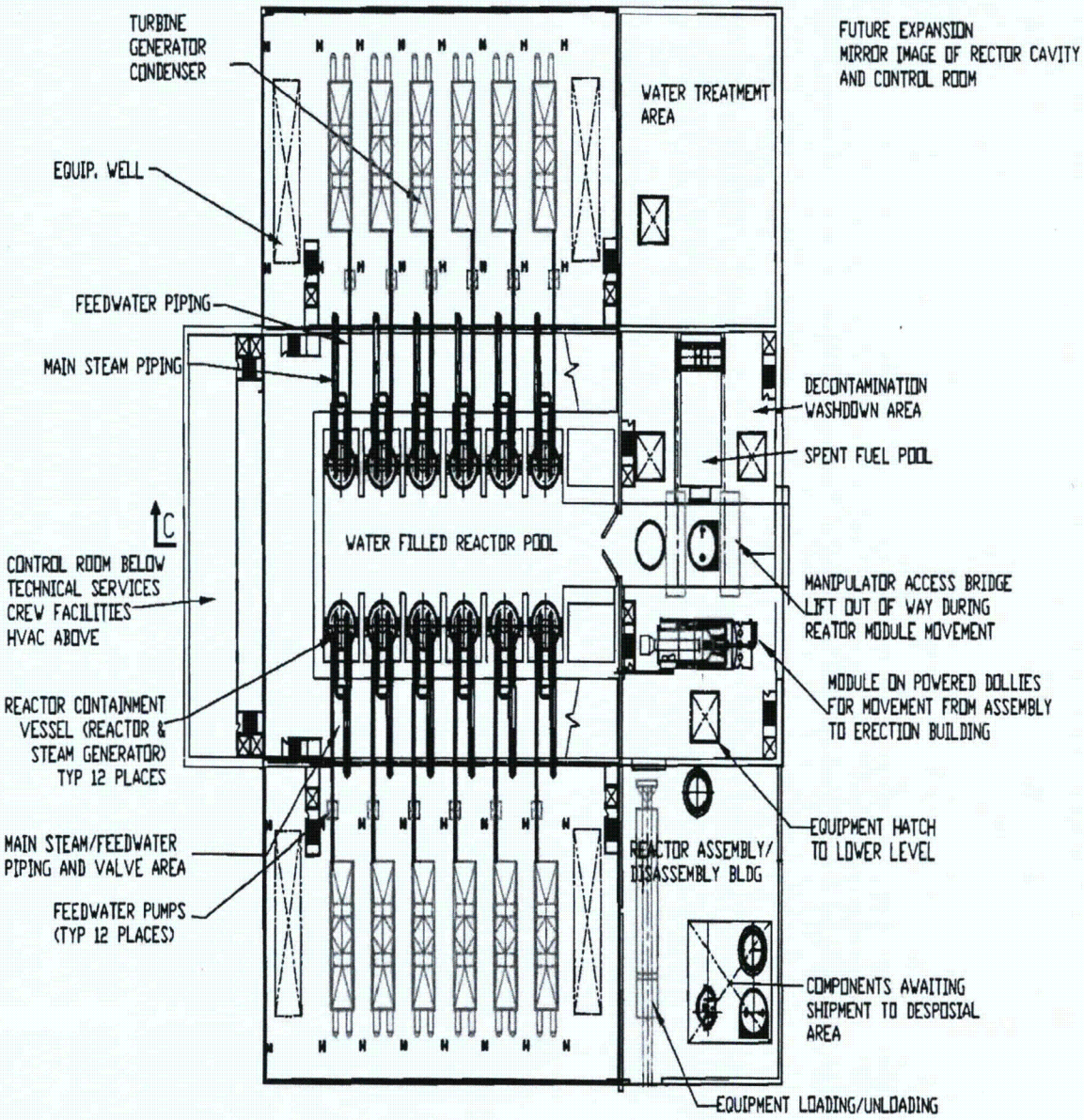
Operation

Cross-sectional view of 6 modules

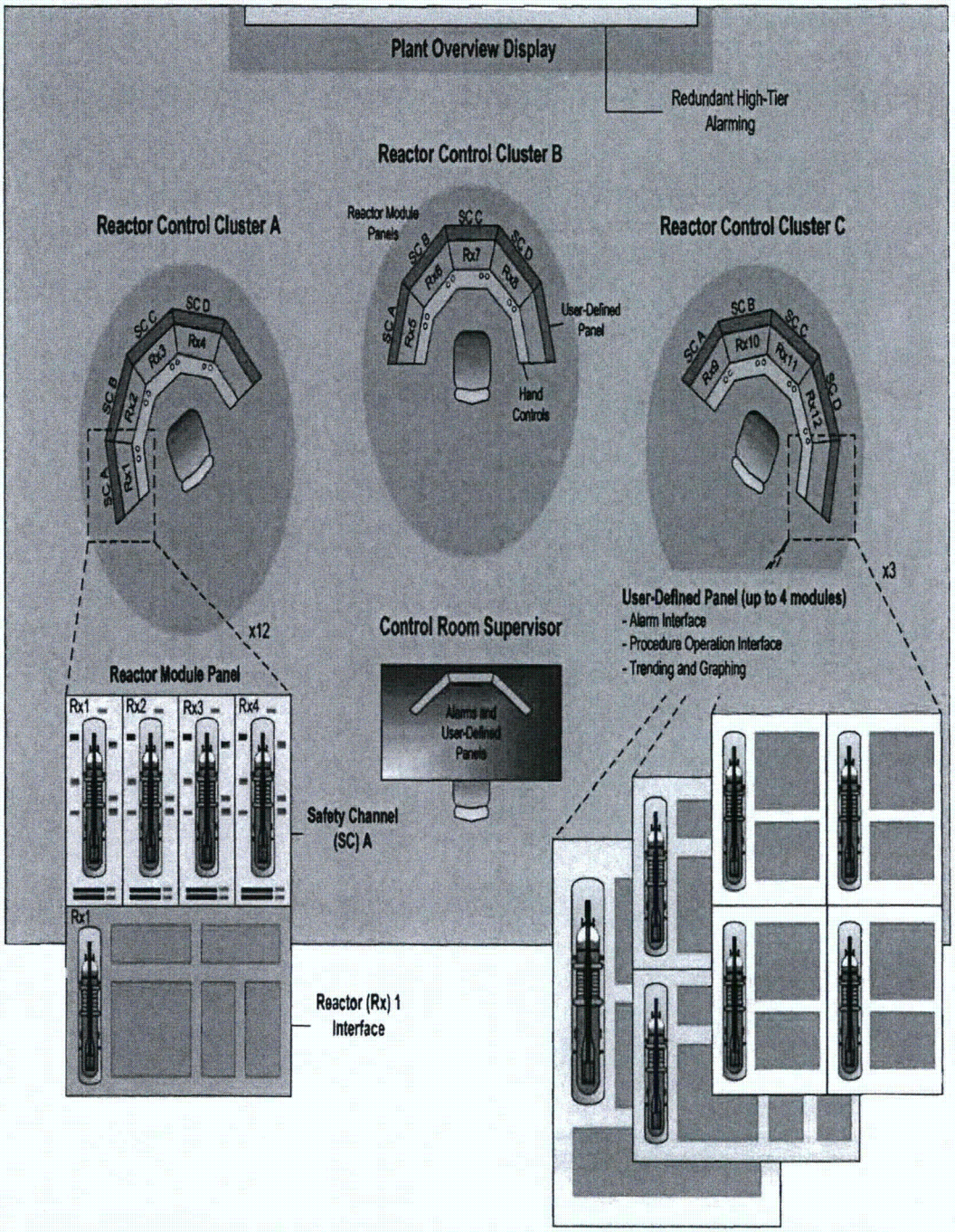


Operation

Plan View of 12 Modules



Operation


Plant Overview Display
Redundant High-Tier Alarming
Reactor Control Cluster A
Reactor Control Cluster B
Reactor Control Cluster C
Reactor Module Panels
SC A
SC B
SC C
SC D
Rx1
Rx2
Rx3
Rx4
Rx5
Rx6
Rx7
Rx8
Rx9
Rx10
Rx11
Rx12
User-Defined Panel
Hand Controls
x12
x3
Control Room Supervisor
Alarms and User-Defined Panels
User-Defined Panel (up to 4 modules)
- Alarm Interface
- Procedure Operation Interface
- Trending and Graphing
Reactor Module Panel
Safety Channel (SC) A
Reactor (Rx) 1 Interface

From:	Burrows, Sheryl
To:	NRO Distribution; Zobler, Marian; Weisman, Robert; Kirkwood, Sara; Moulding, Patrick; Spencer, Michael; Roach, Edward; Price, Sarah; Martin, Jody; Liaw, Stephanie; Barss, Dan; Williams, Vince; Huyck, Doug; Correia, Richard; McDermott, Brian; Sanfilippo, Nathan; Burnell, Scott; Shane, Raeann; Rakovan, Lance; Hannah, Roger; Rihm, Roger; Ellmers, Glenn; Landau, Mindy; Akstulewicz, Frank; Matthews, David; Tonacci, Mark; Mizuno, Geary; Tartal, George; Burton, William; Jasinski, Robert; Bavol, Bruce; Galvin, Dennis; Holahan, Gary; Johnson, Michael
Subject:	Availability of Proposed Rule for Economic Simplified Boiling Water Reactor Design Certification
Date:	Thursday, March 24, 2011 1:10:45 PM
Attachments:	ESBWRDesignCert.pdf

This notice is being sent to interested stakeholders to announce the availability of the proposed rule for 10 CFR Part 52, "ESBWR Design Certification." The NRC is proposing to amend its regulations to certify the ESBWR standard plant design. This action is necessary so that applicants or licensees intending to construct and operate an ESBWR design may do so by referencing this design certification rule (DCR). The applicant for certification of the ESBWR design is GE-Hitachi Nuclear Energy (GEH). The public is invited to submit comments on this proposed DCR, the generic design control document (DCD) that would be incorporated by reference into the DCR, and the environmental assessment (EA) for the ESBWR design.

The proposed rule was published for comment in the Federal Register today (76 FR 16549-16570). The proposed rule will also be available on the Federal eRulemaking Portal http://www.regulations.gov under Docket ID NRC-2010-0135.

Comments on the proposed rule will be accepted through June 7, 2011. Submit comments on the information collection aspects of this rule by April 22, 2011. Comments received after these dates will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after these dates. Comments should include the Docket ID NRC-2010-0135 in the header or subject line.

The attached Federal Register notice explains how to submit comments.

FOR FURTHER INFORMATION CONTACT: Mr. George Tartal, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone at 301-415-0016; e-mail: George.Tartal@nrc.gov; or Amy Cubbage, Office of New Reactors, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone 301-415-2875; e-mail: Amy.Cubbage@nrc.gov.

Sheryl Burrows
Project Manager
Rulemaking and Guidance Development Branch
Division of New Reactor Licensing
Office of New Reactors
Phone: 301-415-6086

Security settings or invalid file format do not permit using ESBWRDesignCert.pdf (244666 Bytes).

From: Whitaker, Barbara
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force
Date: Thursday, March 24, 2011 4:42:57 PM

Awaiting my call? Scott is in a meeting! I'll speak with him tomorrow.

Thanks for your assistance.

Barbara Whitaker

MANAGEMENT ANALYST
NRO-PMDA
T-6D22
301-415-7456

From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:36 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Who did you talk to this morning? You called me within the last 2 hours – I wasn't here most of the morning.

Scott is awaiting your call.

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 4:34 PM
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Hi:

My records indicate T7F18 is vacant as I discussed with you this morning. ADM's inspection of TWFN 7th floor this morning determined T7F18 was unoccupied. The Task Force has to be co-located. Therefore, whomever the person is in T7F18 may have to be moved to T7E59 until the end of July.

Barbara Whitaker

MANAGEMENT ANALYST

NRO-PMDA
T-6D22
301-415-7456

From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:24 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: DSER Response T-7F18 is currently occupied: Task Force
Importance: High

Hi –

T-7F18 is currently occupied by one of the DSER Branch Chiefs.

Please come by and discuss further with Scott.

Thanks,
Carolyn
2736

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 3:26 PM
To: Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Lauron, Carolyn; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: Task Force

Good afternoon:

HEADS UP! I have been informed by the Office of Administration the following office spaces will be utilized to accommodate the Task Force from now until the end of July:

T7F12 and T7F18 (Non-Bargaining)

T7F20, F09 and J06 (Bargaining)

Barbara Whitaker
MANAGEMENT ANALYST
NRO-PMDA
T-6D22
301-415-7456

From: Whitaker, Barbara
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force
Date: Thursday, March 24, 2011 4:39:05 PM

My mistake. I spoke with you this **afternoon**. I'll speak with Scott.

Thanks.

Barbara Whitaker

MANAGEMENT ANALYST
NRO-PMDA
T-6D22
301-415-7456

From: Lauron, Carolyn
Sent: Thursday, March 24, 2011 4:36 PM
To: Whitaker, Barbara; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Who did you talk to this morning? You called me within the last 2 hours – I wasn't here most of the morning.

Scott is awaiting your call.

From: Whitaker, Barbara
Sent: Thursday, March 24, 2011 4:34 PM
To: Lauron, Carolyn; Flanders, Scott; Chokshi, Nilesh; Segala, John; Schum, Constance
Cc: Sweeney, Beverly; Dehn, Janine; Burrows, Sheryl; Grimes, Charemagne; Campbell, Steve
Subject: RE: DSER Response T-7F18 is currently occupied: Task Force

Hi:

My records indicate T7F18 is vacant as I discussed with you this morning. ADM's inspection of TWFN 7th floor this morning determined T7F18 was unoccupied. The Task Force has to be co-located. Therefore, whomever the person is in T7F18 may have to be moved to T7E59 until the end of July.

Barbara Whitaker

MANAGEMENT ANALYST

From:	Schaaf, Robert
To:	Brown, David; Hart, Michelle; Harvey, Brad; Mazaika, Michael; Quinlan, Kevin; Imboden, Andy; Galletta, Thomas; Zalcman, Barry; Emch, Richard; Flanders, Scott; Chokshi, Nilesh; Karas, Rebecca
Cc:	Braden, Michael; Sisk, David; Tammara, Seshagiri; Dickson, Elijah
Subject:	FYI: EPA Defends Radiation Monitoring But Concerns Continue To Mount
Date:	Thursday, March 24, 2011 4:53:18 PM

FYI, activist concerns regarding EPA's rad monitoring network...

http://insideepa.com/201103242358739/EPA-Daily-News/Daily-News/epa-defends-radiation-monitoring-but-concerns-continue-to-mount/menu-id-95.html

Bob

From:	Johnson, Michael
To:	Sprogeris, Patricia
Subject:	FW: OIG"s Most Recent Audit Report: OIG-11-A-08, Audit of NRC"s Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011
Date:	Thursday, March 24, 2011 5:08:00 PM
Attachments:	OIG-11-A-08, Audit of NRC"s Implementation of 10CFR Part 21, Reporting of Defects and Noncompliance FINAL REORT 03.08.11 (pb).pdf

Please print this out for me. Thanks.

From: Wiggins, Jim
Sent: Thursday, March 24, 2011 3:54 PM
To: Johnson, Michael
Subject: FW: OIG's Most Recent Audit Report: OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011

Not much here to shed light on the CSFI issue.

From: Bosco, Paulette
Sent: Wednesday, March 23, 2011 11:25 AM
To: /o=USNRC/ou=First Administrative Group/cn=Recipients/cn=4018eeaf-314116c0-1b3a5e41-6a56e863; Ash, Darren; Boyce, Thomas (OIS); Brenner, Eliot; Burns, Stephen; Cohen, Miriam; Collins, Elmo; Dean, Bill; Doane, Margaret; Dyer, Jim; Greene, Kathryn; Hackett, Edwin; Haney, Catherine; Hawkens, Roy; Howard, Patrick; Johnson, Michael; Kelley, Corenthis; Leeds, Eric; McCrary, Cheryl; McCree, Victor; Miller, Charles; Muessle, Mary; Poole, Brooke; Satorius, Mark; Schmidt, Rebecca; Sheron, Brian; Vietti-Cook, Annette; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy; Boger, Bruce; Burns, Stephen; Campbell, Andy; Casto, Chuck; Dapas, Marc; Dorman, Dan; Grobe, Jack; Hayden, Elizabeth; Howell, Art; Krupnick, David; Lew, David; Moore, Scott; Pederson, Cynthia; Schaeffer, James; Stewart, Sharon; Tracy, Glenn; Uhle, Jennifer; Wert, Leonard; Williams, Barbara
Cc: Wilson, Timothy; Foster, Vicki; Gordon, Judy; Zane, Steven
Subject: OIG's Most Recent Audit Report: OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance - March 23, 2011

Attached please find the following Office of the Inspector General's Most Recent Audit Report:

OIG-11-A-08, Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance – March 23, 2011
ADAMS Accession Number: ML110820426

This report will be publicly available in ADAMS and on the NRC Web site on
arch 24, 2011.

If you have any questions regarding this report, please contact RK Wild, Team Leader at 415-5948 or Vick Foster, Audit Manager at 415-5909.

Thank you.

E-Mail: **paulette.bosco@nrc.gov**

AUDIT REPORT

Audit of NRC's Implementation of 10 CFR Part 21,
Reporting of Defects and Noncompliance

OIG-11-A-08 March 23, 2011

All publicly available OIG reports (including this report) are accessible through
NRC's Web site at:
http:/www.nrc.gov/reading-rm/doc-collections/insp-gen/

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

OFFICE OF THE
INSPECTOR GENERAL

March 23, 2011

MEMORANDUM TO: R. William Borchardt
Executive Director for Operations

FROM: Stephen D. Dingbaum **/RA/**
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S IMPLEMENTATION OF 10 CFR PART 21, REPORTING OF DEFECTS AND NONCOMPLIANCE (OIG-11-A-08)

Attached is the Office of the Inspector General's (OIG) audit report titled, *Audit of NRC's Implementation of 10 CFR Part 21, Reporting of Defects and Noncompliance.*

The report presents the results of the subject audit. OIG discussed the audit results and informal agency comments with agency management and staff during an exit conference on February 1, 2011, and during a meeting on February 23, 2011. OIG incorporated the agency's informal comments into this final report as appropriate. NRC management stated that the report will be helpful in adding clarity in the associated regulatory area and opted not to provide formal comments.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum. Actions taken or planned are subject to OIG followup as stated in Management Directive 6.1.

We appreciate the cooperation extended to us by members of your staff during the audit. If you have any questions or comments about our report, please contact me at 415-5915 or R.K. Wild, Team Leader, Nuclear Reactor Safety Team, at 415-5948.

Attachment: As stated

Electronic Distribution

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EXECUTIVE SUMMARY

BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*[1] provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects[2] in operating reactors. Specifically, Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components[3] that could cause a substantial safety hazard.[4]

NRC uses Title 10, Code of Federal Regulations, Part 21, *Reporting of Defects and Noncompliance* (Part 21) to implement the provisions of Section 206. The primary NRC office responsible for Part 21 implementation among licensees with operating plants is the Office of Nuclear Reactor Regulation.

PURPOSE

The purpose of this audit was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*.

---

[1] For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

[2] A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

[3] A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

[4] A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

RESULTS IN BRIEF

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act*. However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

RECOMMENDATIONS

This report makes five recommendations to improve NRC's implementation of Part 21. A list of these recommendations appears on pages 12-13 of this report.

AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward, OIG incorporated the informal comments into the draft report as appropriate. NRC management and staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

ABBREVIATIONS AND ACRONYMS

CFR	Code of Federal Regulations
EQVB	Division of Engineering, Quality and Vendor Branch
IP	Inspection Procedure
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OIG	Office of the Inspector General

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I. BACKGROUND

The Nuclear Regulatory Commission (NRC) endeavors to protect the public health and safety and the environment through the regulation of the 104 operating nuclear power plants in the United States. The *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*[5] provides the statutory basis for NRC guidance and regulations that pertain to reporting component defects[6] in operating reactors. Specifically, Section 206:

- Requires licensees that operate nuclear power plants to notify NRC of defects in basic components[7] that could cause a substantial safety hazard.[8]
- Requires NRC to define, by regulation, defects which could create a substantial safety hazard.
- Identifies the civil penalties that are to be imposed for noncompliance and posting requirements at licensees' facilities, and authorizes inspections and other enforcement activities needed to ensure compliance with the provisions.

NRC Component Defect Reporting Regulation

Title 10, Code of Federal Regulations (CFR), Part 21, *Reporting of Defects and Noncompliance* (Part 21) implements the provisions of Section 206. Part 21 requires that licensees inform NRC if they obtain

[5] For the purposes of this report, *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* is referred to as Section 206.

[6] A defect is a deviation in a basic component delivered to a purchaser for use in operating nuclear power plants if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

[7] A basic component is a structure, system, or component that assures the integrity of the reactor coolant pressure boundary; the capability to shut down the reactor and maintain it in a safe shutdown condition; or the capability to prevent or mitigate the consequences of accidents. It is, essentially, a safety-related component.

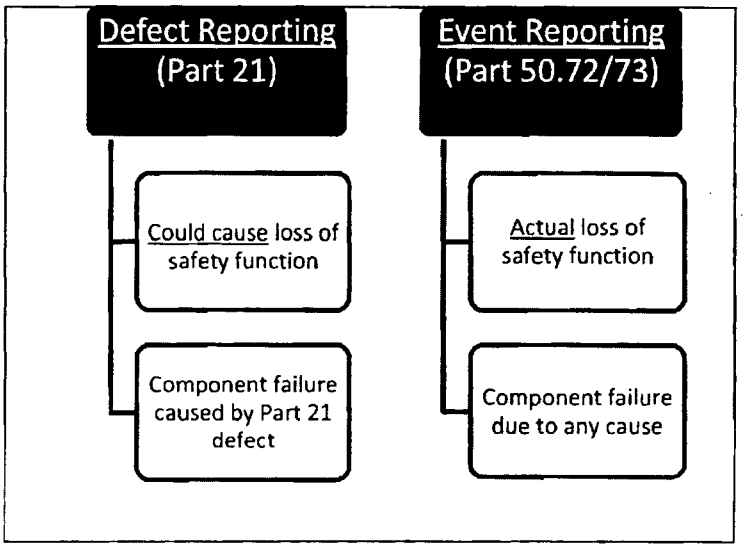
[8] A substantial safety hazard is the loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety. Safety functions are necessary to assure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in certain potential offsite exposures.

information that indicates that basic components fail to comply with regulatory requirements relating to substantial safety hazards or contain defects that could create a substantial safety hazard.

NRC revised Part 21 in 1991. Among other things, the revision was intended to reduce duplicative licensee reporting requirements, and allow for reporting of defects under NRC event reporting regulations. These NRC event reporting regulations are contained in Title 10, CFR, Part 50.72 and Part 50.73 (Part 50 Sections 72/73).[9]

There are differences between Part 21 and Part 50 Sections 72/73 reporting requirements. One difference is that Part 21 concerns itself with component defect reporting, whereas Part 50 Sections 72/73 describe event reporting. Consequently, the thresholds for reporting a component defect under Part 21 are different than those for Part 50 Sections 72/73, as shown in Figure 1.

Figure 1: Defect Reporting vs. Event Reporting Differences



Source: Office of the Inspector General analysis of reporting requirements.

Another difference between the Part 21 defect reporting and Part 50 Sections 72/73 event reporting requirements is that Part 21 defect reporting requires an evaluation *and* report if the defect *could* cause a loss of safety function, whereas Part 50 Sections 72/73 events require

[9] Title 10, CFR, Part 50.72, *Immediate notification requirements for operating nuclear power reactors,* describes how licensees must notify NRC of events and conditions and Title 10, CFR Part 50.73, *Licensee event report system,* describes the type of events and conditions that must be reported to NRC in Licensee Event Reports.

reporting of only *actual* losses of safety function.[10] In addition, Part 21 defect reporting requirements include individual component failures if the failures are caused by a defect. Part 50 Sections 72/73 would not require reporting of an individual component failure unless the failure caused a loss of safety function. Typically, safety functions are supported by multiple redundant components—such as multiple service water pumps—so that loss of a single component does not cause a loss of safety function.

To illustrate the difference, two nuclear power plants could experience the same basic component failure due to a defect that did not cause an event. Some licensees interpret this as reportable under Part 21, whereas others do not, since an event did not occur based on Part 50 Sections 72/73. However, Section 206 (which provides the statutory basis for Part 21) requires reporting of component defects that *could* cause a loss of safety function as well as those that did cause an actual loss of safety function. Part 50 Sections 72/73 only requires reporting if a failure *actually* caused a loss of safety function.

Office of Nuclear Reactor Regulation (NRR) Responsibility for Part 21 Implementation

The primary NRC office responsible for Part 21 implementation among licensees with operating plants is NRR. Two NRR divisions are responsible for monitoring and enforcing Part 21-related issues:

- Division of Engineering, Quality and Vendor Branch (EQVB).

[10] *Part 50 Sections 72/73* require power reactor licensees to notify NRC of any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to (A) shut down the reactor and maintain it in a safe shutdown condition, (B) remove residual heat, (C) control the release of radioactive material, or (D) mitigate the consequences of an accident. Furthermore, *Part 50 Sections 72/73* state that events required to be reported under *Part 50 Sections 72/73* may include one or more procedural errors; equipment failures; and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies. However, individual component failures need not be reported under *Part 50 Sections 72/73* if redundant equipment in the same system was operable and available to perform the required safety function.

- EQVB is primarily responsible for reviewing nuclear reactor operating experience relevant to the quality of components regulated under Part 21. EQVB works closely with NRR's Operating Experience Branch to identify Part 21-related issues. EQVB also provides oversight through inspection and allegation follow-up of quality assurance and Part 21 implementation for component manufacturers.

- Division of Inspection and Regional Support, Operating Experience Branch.

  - The Operating Experience Branch is part of an NRC coordinated program to systematically collect and evaluate licensee operating experience, identify and resolve safety issues in a timely manner, and apply lessons learned from operating experience to support the agency goal of ensuring safety. Such reviews include evaluation of Part 50 Sections 72/73 licensee event reports (LER) for event occurrences that have Part 21 defective component implications.

II. PURPOSE

The audit objective was to determine if NRC's implementation of Federal regulations requiring reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance*. The report appendix contains information on the audit scope and methodology.

III. FINDING

NRC staff has initiated action to better align NRC's defect reporting guidance with Section 206 of the *Energy Reorganization Act.* However, NRC will need to take further action so that NRC's implementation of Part 21 fully meets the intent of Section 206.

Section 206 requires licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard. However, NRC staff have noted Part 21 reporting issues, and Office of the Inspector General (OIG) analysis of industry data indicate that there are apparent unreported Part 21 defects. These reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear, and the NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects. Unless NRC takes action to fully implement Section 206, the margin of safety for operating reactors could be reduced.

Despite Reporting Requirements, There Are Unreported Part 21 Defects

Despite Section 206 requirements for licensees that operate nuclear power plants to notify NRC of defects in basic components that could cause a substantial safety hazard, examples indicate that there are defective components that should be reported under Part 21, but are not. Specifically, NRC headquarters and regional staff and OIG have identified apparent unreported Part 21 defects. Furthermore, NRC staff and licensees described examples of licensees' standard practice for reporting defective components that may result in the under-reporting of defects under Part 21.

Identification of Part 21 Reporting Defects

NRC staff identified examples of apparent unreported defective components that could cause a substantial safety hazard as described in LERs under Part 50 Sections 72/73, but were not reported as Part 21 defective components. Since mid-2009, when NRC inspectors became aware of potentially unreported defects during an inspection of a plant, agency staff have been evaluating LERs for potentially unreported defects under Part 21. Furthermore, NRR staff conducted an analysis of LERs

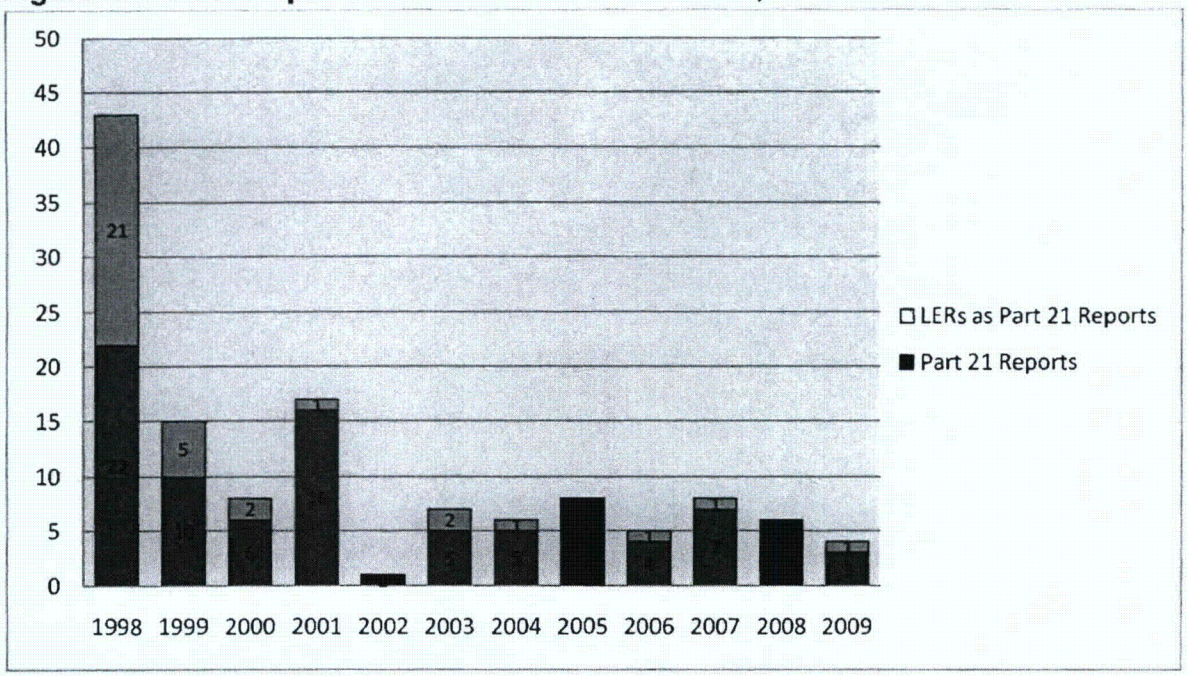
with potential Part 21 implications during the period December 2009 through September 2010, and identified 24 instances of LERs that had Part 21 implications but were not reported under Part 21.

OIG staff also identified examples of apparent unreported defective components. OIG independently analyzed LERs submitted under Part 50 Sections 72/73 and found some describing defective components that could cause substantial safety hazards, but were not reported to NRC under Part 21. During the period June 2009 through June 2010, OIG identified 11 LERs that contained apparent Part 21 reportable defects where the licensee had not indicated that it had conducted a Part 21 evaluation or provided a Part 21 report. Given that the period of review for OIG's analysis of LERs was different than the agency's review period, OIG auditors requested NRR staff to review the OIG analysis results. NRR staff concurred that 5 of the 11 LERs that OIG identified had apparent Part 21 reportable defects. NRR staff either did not support or could not determine if the remaining LERs also had potential Part 21 reportable defects based on the data available in the LERs.

Further, OIG reviewed three reactor control room logs recorded during the 4th quarter of 2009. OIG's analysis indicates that for every safety-related component failure that occurs and is reported, there are several that occur but do not meet the level of reportability using Part 50 Sections 72/73 reporting criteria.

OIG also calculated for each year the number of Part 21 reports filed by licensees since 1998. As Figure 2 indicates, there was a significant decline in the number of Part 21 reports after 2001. Figure 2 also indicates how many Part 21 reports were made through LERs according to Part 50 Sections 72/73 reporting criteria.

Figure 2: Part 21 Reports from Nuclear Power Plants, 1998-2009



Source: OIG analysis of NRC data.

Examples of Licensee Standard Practices for Reporting Defective Components

During the course of the review, OIG met with agency and industry stakeholders to ascertain licensees' standard practices for reporting defective components under Part 21. NRC staff and licensees described to OIG some examples of Part 21 reporting practices that indicate there are unreported defective components.

NRC senior resident inspectors described licensee Part 21 reporting practices that indicate unreported defective components. Four of seven senior resident inspectors interviewed by OIG described a practice wherein licensees (1) evaluate whether a defective component caused an event under 50.72 reporting criteria, but (2) fail to follow up with a Part 21 evaluation or submit a Part 21 report when the 50.72 evaluation concludes that the events caused by the defective component did not reach the threshold for reporting under Part 50 Sections 72/73. Senior resident inspectors provided OIG with the following examples:

- LERs that should have been reported under Part 21, but were not.

- The licensee belief that loss of safety function was required to conduct a Part 21 evaluation and report.[11]

- A licensee that considers Part 50 Sections 72/73 event reporting evaluations to meet Part 21 defect reporting requirements, even if the Part 50 Sections 72/73 evaluation result is that the event is not reportable to NRC.

- A licensee that has opted not to conduct Part 21 evaluations or reports because, according to the licensee, current regulations and guidance do not require this as long as they did an event reporting evaluation.

NRC licensees also described their Part 21 reporting practices in a manner that further indicated the likelihood of unreported defective components. Some industry representatives stated that, as standard practice, they do not notify NRC of Part 21 defects unless the defects are reportable under Part 50 Sections 72/73 event reporting regulations. Based on interviews and analysis, OIG determined that licensees representing at least 28 percent of the operating reactor fleet do not, as standard practice, notify NRC of defects under Part 21 unless they are reportable under event reporting regulations.

NRC Regulations and Guidance for Implementing Section 206 Are Contradictory and Unclear

Part 21 component defect reporting issues exist because NRC regulations and guidance for implementing Section 206 are contradictory and unclear. Specifically, NRC regulations and guidance for implementing Section 206 contain stipulations that have been interpreted as not requiring a report under Part 21 if an LER was not required. This interpretation seemingly contradicts Section 206, which requires reporting of component defects that could cause substantial safety hazards. Furthermore, applicable NRC reportability guidance is not utilized by some licensees and NRC staff, and NRC's Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.

[11] As shown earlier in Figure 1, Part 21 requires reporting the defect if a failure *could* cause loss of safety function, not if it actually does.

NRC Regulations and Guidance Are Interpreted as Relieving Licensees of Defect Reporting Obligations

NRC regulations and guidance for implementing Section 206 contain stipulations that some licensees and NRC staff have interpreted as relieving licensees of their obligation to report to NRC defects in basic components that could cause a substantial safety hazard. This includes specific language in Part 21, a 1991 *Federal Register Notice* that summarized Part 21, and NRC guidance on event reporting in NUREG-1022.

The agency introduced some uncertainty regarding event reporting when it revised Part 21 in 1991. Part 21 Section 2(c), states:

> For persons licensed to operate a nuclear power plant under part 50 ... of this chapter, evaluation of potential defects and appropriate reporting of defects under §§ 50.72, 50.73 ... satisfies each person's evaluation, notification, and reporting obligation to report defects under this part.

Moreover, the agency has interpreted language from the July 31, 1991, *Federal Register Notice,* Statement of Consideration as guidance to facilitate implementation of Part 21 Section 2(c). The Statement of Consideration provides the following sentence which can also be seen as contradictory to Section 206:

> If the event is determined not to be reportable under §50.72 or §50.73, then the obligations of Part 21 are met by the evaluation.

Additionally, in October 2000, NRC revised NUREG-1022, which provides event reporting guidelines for Part 50 Sections 72/73. This 115-page guidance document offers a three-paragraph subsection on Part 21, which states (in part):

> The only case where a defect in a basic component of an operating reactor might be reportable under Part 21, but not under §§ 50.72, 50.73 ... would involve parts on the shelf.[12]

This language effectively leaves NUREG-1022 in conflict with Section 206.

The combination of the changes to Part 21 and associated guidance have resulted in a lack of clarity for implementing Section 206. Given these written passages in Part 21.2(c), NUREG-1022, and the July 31, 1991, Statement of Consideration, some licensees have concluded that if they conduct evaluations consistent with event evaluation and reporting thresholds, then they have also met Part 21's evaluation and reporting requirements. Some NRC resident inspectors shared this interpretation as well. One resident inspector indicated to OIG that conducting a Part 50 Sections 72/73 evaluation and/or report fulfilled a licensee's Part 21 requirements. Another resident inspector asserted that Part 21 evaluations and reporting are more the responsibility of the vendor than the licensee.

To resolve confusion about implementing Part 21 component defect reporting and to better align NRC's defect reporting guidance with Section 206, NRC regional office personnel sought clarification from NRC management officials. However, NRC management officials have responded that defect reporting guidance and Part 21 itself have resulted in multiple interpretations of Part 21 reporting requirements, which presents an obstacle towards clarifying Part 21 reporting.[13] Consequently, NRC has not yet established a position that would result in consistent interpretation and application of Part 21 guidance and regulations on the part of NRC staff and resident inspectors, as well as licensees.

[12] Parts on the shelf refer to components that are in a nuclear power plant's inventory that have not been installed.

[13] For example, recent inspections uncovered a potential Part 21 violation at a nuclear power plant that NRC has not resolved for the past 2 years.

Applicable Reportability Guidance Is Not Used

Existing NRC guidance for implementation of Part 21 is applicable, but not all NRC staff and licensees use it. NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance*, published in July 1977, contains guidance for Part 21 implementation and reporting. NUREG-0302 was published in 1977—prior to the changes in 1991 that allowed reporting under Part 50 Sections 72/73 —and, therefore, does not include guidance on reporting Part 21 defects under Part 50 Sections 72/73.

According to agency staff, NUREG-0302 is not frequently used by less experienced staff because it is "35 years old," and is composed of public meeting summaries. Consequently, newer staff are not as familiar with NUREG-0302. Agency staff surmised that less experienced staff are more likely to use recent guidance, such as the Statement of Consideration, NUREG-1022, and less formal information obtained during training. Senior NRR staff also indicated that the question-and-answer format and numbering schematic in NUREG-0302 make it difficult to use. NRR staff agreed that the guidance in NUREG-0302 remains valid to this day, despite its lack of visibility to newer staff.

NRC Baseline Inspection Program Does Not Include Requirements To Inspect Licensee Reporting of Part 21 Defects

The NRC Baseline Inspection Program does not include requirements to inspect licensee reporting of Part 21 defects.[14] Currently, the NRC Baseline Inspection Program does not include a reference to Part 21-related Inspection Procedures (IP). IP 36100, *Inspection of 10 CFR Parts 21 and 50.55(e) Programs for Reporting Defects and Noncompliance,* provides guidance to NRC inspectors for inspecting Part 21 reporting at operating nuclear power plants. Senior resident inspectors told OIG that they are aware of IP 36100, but there was no "hook" in the Baseline

[14] The Baseline Inspection Program is an integral part of the NRC's reactor oversight process. Its objectives are to (1) obtain inspection information and performance indicators to assess safety performance of power reactor licensees, (2) determine the licensee's ability to identify and assess risk and effectively correct issues, (3) verify accuracy and completeness of performance indicators, and (4) provide a mechanism for the NRC to remain cognizant of plant status and conditions.

Inspection Program that would prompt an inspector to consider conducting an inspection using IP 36100.[15]

Incomplete Implementation of Section 206 Could Reduce the Margin of Safety for Operating Reactors

Incomplete implementation of Section 206 could reduce the margin of safety for operating nuclear power reactors as NRC may remain unaware of component failures that have resulted from manufacturing defects. Unless NRC takes further action to sufficiently implement Section 206, staff and stakeholders may not be notified of component defects. For example, given current interpretations of regulations and guidance related to defect reporting, a licensee might not report a basic component that failed due to a design defect. Other licensees that use the same component, as well as component manufacturers, may be unaware of the problem. Absent knowledge of manufacturing defects, NRC and its stakeholders will also not be able to trend such information.

Additionally, NRC inspectors face difficulties in enforcing defect reporting given the lack of clarity in Part 21 and related guidance. As noted earlier, NRC inspectors have found possible Part 21 reporting violations. However, pending resolution of the contradictory and unclear guidance and regulations, the agency has opted not to cite licensees for violations and not issue civil penalties for licensees' failure to notify NRC of defects in basic components that could cause a substantial safety hazard. Therefore, NRC is not fully enforcing the Part 21 regulation as required by Section 206. Furthermore, NRC has not levied any civil penalties or significant enforcement actions for nuclear power plant licensee Part 21 defect reporting lapses in at least the past 8 years.

Recommendations

OIG recommends that the Executive Director for Operations:

1. Revise 10 CFR Part 21 for full conformity with the *Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance.*

[15] The Baseline Inspection Program does not currently include guidance for how inspectors should check for defective parts. NRR staff have indicated this is a condition that should be corrected.

2. Expedite publication of interim guidance that specifies requirements for Part 21 reporting in accordance with the *Energy Reorganization Act of 1974, As Amended, Section 206, Noncompliance*.

3. Correct the sections of NUREG-1022, *Event Reporting Guidelines 10 CFR 50.72 and 50.73, October 2000,* that are in conflict with the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance* and 10 CFR Part 21.

4. Review, revise as applicable, and reissue NUREG-0302, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance*, July 12 - 26, 1977.

5. Incorporate Inspection Procedure 36100, *Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance* into the NRC Baseline Inspection Program.

IV. AGENCY COMMENTS

On January 19, 2011, OIG issued the discussion draft of this report to the Executive Director for Operations. OIG subsequently met with NRC management officials and staff during a February 1, 2011, exit conference at which time the agency requested additional time in order to provide informal comments. OIG met with agency management and staff on February 23, 2011, to discuss these comments; afterward OIG incorporated the informal comments into the draft report as appropriate. NRC staff reviewed the revised draft OIG report, found that the report will be helpful in adding clarity in the associated regulatory area, and opted not to provide formal comments.

Appendix

SCOPE AND METHODOLOGY

The audit objective was to assess the extent to which NRC's implementation of Federal regulations requiring nuclear power reactor licensees to report defects contained in installed equipment is meeting the intent of the *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.* The audit scope was limited to NRC's regulatory responsibilities as they pertain to commercial nuclear power plants. To address the audit objective, OIG interviewed agency headquarters and regional staff, senior resident and resident inspectors, and selected licensee officials. OIG also reviewed NRC regulations and guidance as well as LERs and Part 21 reports for the period June 2009 through June 2010 and various inspection reports. OIG also analyzed control room logs for three reactor units, as well as agency-collected information pertaining to potentially unreported Part 21 defects.

Key documents reviewed include:

- *Energy Reorganization Act of 1974, as Amended, Section 206, Noncompliance.*
- 10 CFR Part 21, *Reporting of Defects and Noncompliance.*
- NUREG-0302, Rev 1, *Remarks Presented (Questions/Answers Discussed) at Public Regional Meetings to Discuss Regulations (10 CFR Part 21) for Reporting of Defects and Noncompliance.*
- *Federal Register Notice*, Vol. 56, No. 147, Statement of Consideration, Part 21.
- NUREG-1022, Rev 2, *Event Reporting Guidelines for 10 CFR 50.72 and 50.73.*
- Management Directive (MD) 8.18, *NRC Generic Communications Program.*
- Inspection Procedure 36100, *Inspection of 10 CFR Parts 21 and 10 CFR 50.55(e) Programs for Reporting Defects and Noncompliance.*

- Agency Office Instructions.
- Agency Generic Communications.
- Nuclear industry guidance documents.

Auditors conducted interviews with agency and industry employees, including NRC managers and staff members at headquarters and the regions, and members of the nuclear industry.

We conducted this performance audit at NRC headquarters in Rockville, MD, from July 2010 through December 2010, in accordance with generally accepted Government auditing standards. Those standards require that the audit is planned and performed with the objective of obtaining sufficient, appropriate evidence to provide a reasonable basis for any findings and conclusions based on the stated audit objective. OIG believes that the evidence obtained provides a reasonable basis for the report findings and conclusions based on the audit objectives. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility or existence of fraud, waste, or misuse in the program.

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