PMVictoriaESPPEm Resource

From: david.distel@exeloncorp.com
Sent: Friday, February 25, 2011 11:56 AM
To: Jessie, Janelle; Hale, Jerry
Subject: Exelon Letter - Response to Hydrology Audit Information Needs Items 8, 52a, and 66
Attachments: NP-11-0009 - Hydrology Audit Information Needs Response Items 8, 52a, 66.PDF

Janelle/Jerry – Attached is a courtesy copy of the Exelon Response to Hydrology Audit Information Needs Items 8, 52a, and 66 submittal letter signed out yesterday. The original letter and the designated cc's are being mailed today. Please forward a copy to the appropriate staff hydrology reviewers.

Thanks.

Dave Distel

David J. Distel
New Plant Development
Exelon Licensing
610-765-5517
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Hearing Identifier: Victoria_ESP_Public
Email Number: 268

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Subject: Exelon Letter - Response to Hydrology Audit Information Needs Items 8, 52a, and 66
Sent Date: 2/25/2011 11:55:33 AM
Received Date: 2/25/2011 11:55:44 AM
From: david.distel@exeloncorp.com

Created By: david.distel@exeloncorp.com

Recipients:
"Jessie, Janelle" <Janelle.Jessie@nrc.gov>
Tracking Status: None
"Hale, Jerry" <Jerry.Hale@nrc.gov>
Tracking Status: None

Post Office: mobmsxch04.energy.power.corp

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MESSAGE	1308	2/25/2011 11:55:44 AM
NP-11-0009 - Hydrology Audit Information Needs Response Items 8, 52a, 66.PDF	302021	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Exelon Generation

NP-11-0009
February 24, 2011

10 CFR 52, Subpart A

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Exelon Nuclear Texas Holdings, LLC
Victoria County Station Early Site Permit Application
Hydrology Audit Information Needs Response
NRC Docket No. 52-042

In response to the NRC information needs requests identified during the NRC Hydrology Audit conducted on November 30, 2010 and December 1, 2010, Exelon is providing responses to the following NRC Information Needs (INH) Items:

INH No. 8 (SSAR Section 2.4.3)
INH No. 52a (SSAR Section 2.4.12)
INH No. 66 (SSAR Section 2.4.14)

If any additional information is needed, please contact David J. Distel at (610) 765-5517.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 24th day of February, 2011.

Respectfully,

Marilyn C. Kray
Vice President, Nuclear Project Development

Attachments:
1. INH No. 8 Response
2. INH No. 52a Response
3. INH No. 66 Response
4. Summary of Commitments

cc: USNRC, Director, Office of New Reactors/NRLPO (w/Attachments)
USNRC, Project Manager, VCS, Division of New Reactor Licensing (w/Attachments)
USNRC Region IV, Regional Administrator (w/Attachments)

Information Needs Item No. 8:

NRC Request:

Please provide annual peak discharge data for USGS gage no. 0818850, San Antonio R. at Goliad, TX and attendant discharge-frequency computations.

Response:

During the Hydrology Audit held on November 30, 2010, Exelon identified that annual peak discharge data for USGS Gage No. 08188500 (San Antonio River at Goliad, TX) are included in SSAR Rev 0, Subsection 2.4.2. The attendant discharge-frequency computations are documented in the calculation titled "Probable Maximum Floods on Streams and Rivers", which is available for review in the VCS ESPA reading room.

In the meeting, NRC also asked that clarifications be provided on two items: (a) an apparent discrepancy of about 10 percent in the Coleto Creek Dam/Reservoir elevation-storage relationships shown in SSAR Rev 0, Tables 2.4.3-10 and Table 2.4.3-11, and (b) the statements "*The elevation-storage relationships for the Coleto Creek Dam are slightly different from those given in Subsections 2.4.1 and 2.4.4. Since the impact due to these differences is expected to be minor, they are adopted in the VCS PMF model as given in the NWS RFS model.*" in SSAR Rev 0, Subsection 2.4.3.3, page 2.4.3-7.

Clarification for Item (a):

As described in SSAR Rev 0 Subsection 2.4.3.3.1, the elevation-storage and storage-discharge relationships for the Coleto Creek Dam/Reservoir used in the PMF analysis for the Victoria County Station (VCS) site, as shown in the corresponding Tables 2.4.3-10 and 2.4.3-11, are adopted from the National Weather Service (NWS), River Forecast System (RFS) for Guadalupe River Basin (Reference 2.4.3-2). SSAR Table 2.4.3-10 listed the storage values for specific elevations from 58 to 120 feet NGVD 29 as given in Reference 2.4.3-2. SSAR Table 2.4.3-11, however, focuses primarily on storages above elevation 98.5 feet NGVD 29, which is the starting water level for the Coleto Creek Dam in the VCS PMF analysis (see SSAR Table 2.4.3-25). The additional elevation-storage values provided in Table 2.4.3-11 from elevation 98.5 to 108 feet NGVD 29 were derived by interpolation of the relationship in Table 2.4.3-10. The two elevation-storage relationships are compared graphically in Figure 1, which illustrates that there is no discrepancy in the elevation range of significance to the PMF analysis (above 98.5 feet NGVD 29).

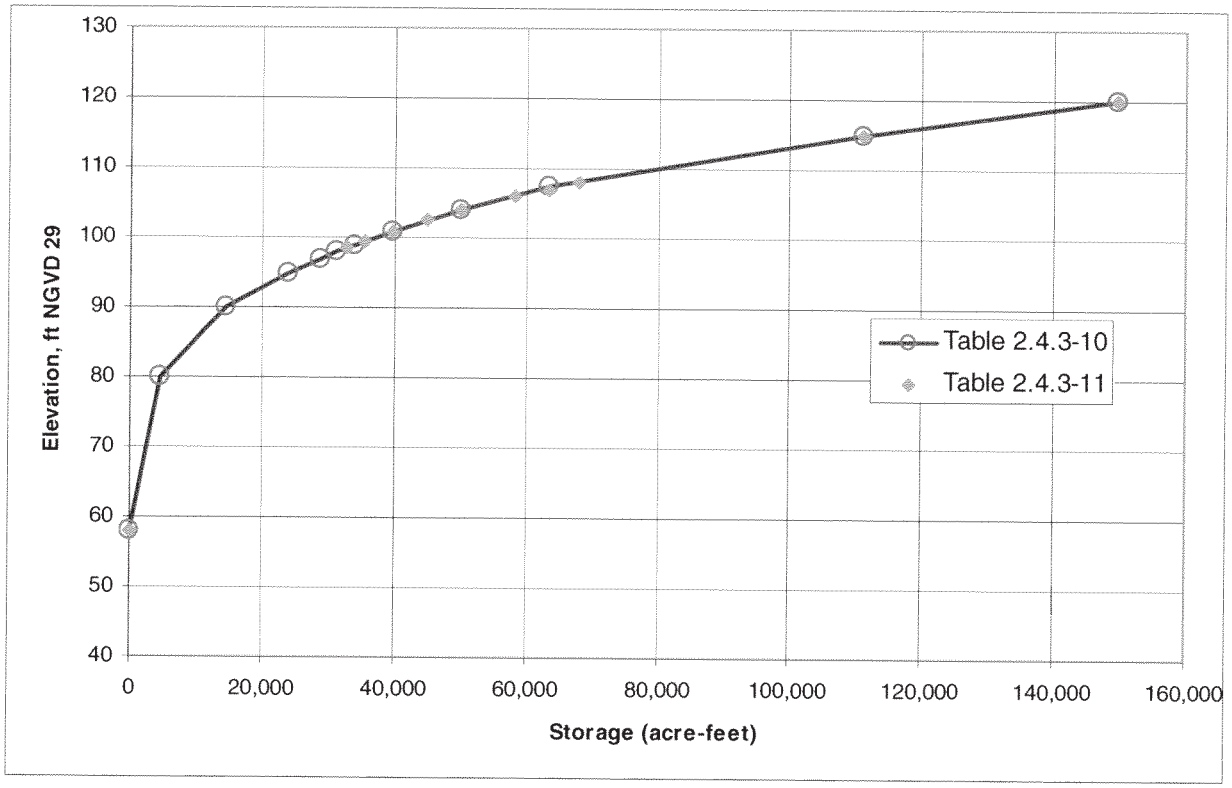

Figure 1. Elevation-storage relationships for Coleto Creek Dam based on SSAR Tables 2.4.3-10 and -11

As a result of the clarification to Item (a), the footnote for SSAR Rev 0, Table 2.4.3-11 will be revised as follows:

Source: U.S. National Weather Service River Forecast System for Guadalupe River Basin (Reference 2.4.3-2), with storage values interpolated from Table 2.4.3-10 (for elevations 98.5 feet NGVD 29 and higher).

Note: Elevations in Table 2.4.3-11 are given in terms of NGVD 29. To convert to NAVD 88, subtract 0.29 feet from the values shown in the table.

Clarification for Item (b):

The elevation-storage relationship for Coleto Creek Dam in SSAR Subsections 2.4.1 and 2.4.4, referenced in the second paragraph of SSAR Rev 0 Subsection 2.4.3.3 (pages 2.4.3-6 and -7), is the maximum storage of 169,000 acre-feet and an effective top of dam elevation of 120 feet NGVD 29 as provided by Texas Commission on Environmental Quality, Dam Safety Division. This maximum storage is different from the value of 149,800 acre-feet (at elevation 120 feet NGVD 29) shown in SSAR Tables 2.4.3-10 and 2.4.3-11 for the PMF analysis. The use of the lower storage value (149,800 acre-feet) is consistent with the NWS RFS for Guadalupe River Basin (Reference 2.4.3-2) and is conservative for the VCS PMF analysis in that less credit is taken for flood attenuation due to storage effect.

As a result of the clarification to Item (b), the second paragraph of SSAR Subsection 2.4.3.3 (pages 2.4.3-6 and -7), Rev 0 will be revised as follows:

The USACE model only covers the portion of the basin upstream of the USGS gage at Victoria, Texas. It does not include the drainage area from Coleto Creek, a tributary of the Guadalupe River, which joins the main river downstream of the gage at Victoria but upstream of the VCS site. The Coleto Creek Watershed, together with the Coleto Creek Dam/Reservoir are modeled by including the drainage areas given by the USGS at gaging station No. 08176900 (Reference 2.4.3-13) and by Halff Associates for the Coleto Creek Dam/Reservoir (Reference 2.4.3-6). The drainage area downstream of the Coleto Dam to its confluence with the Guadalupe River, the subbasin boundaries, and the elevation-storage-discharge relationships for the Coleto Creek Dam/Reservoir are those given in the NWS RFS for the Guadalupe River Basin near Bloomington, Texas (Reference 2.4.3-2). The storage of 149,800 acre-feet at elevation 120 feet NGVD 29~~elevation-storage relationships~~ for the Coleto Creek Dam shown in Tables 2.4.3-10 and 2.4.3-11 is ~~are~~ slightly different from the maximum storage of 169,000 acre-feet given in Subsections 2.4.1 and 2.4.4. Since the impact due to these differences is expected to be minor, ~~they~~ the values from Tables 2.4.3-10 and 2.4.3-11 are adopted in the VCS PMF model, consistent with ~~as given in~~ the NWS RFS model. In effect, the use of the lower storage value in the VCS PMF analysis produces a more conservative result because of the reduced flow attenuation due to storage effect.

In addition, the third paragraph of SSAR Subsection 2.4.3.5 (page 2.4.3-13), Rev 0, regarding the gage number for San Antonio River at Goliad, Texas, will be revised from "0818850" to "08188500" as follows:

The USGS gaging station on the San Antonio River closest to its confluence with the Guadalupe River and with a long stream flow record for flood frequency analysis is at Goliad, Texas, USGS Gage No. 0818850**0**). At this gage, the San Antonio River drains an area of approximately 3921 square miles (10,155 km^2), and has annual peak discharge records of 75 years (Reference 2.4.3-13). A flood frequency analysis is performed using these 75-years of data, assuming the Log-Pearson Type III distribution and following the formulations suggested by Rao and Hamed (Reference 2.4.3-24) and USGS Bulletin 17B (Reference 2.4.3-25). The 500-year flood peak discharge at Goliad is found to be approximately 164,000 cfs (4644 m^3/s).

Associated ESPA Revision:

In response to this NRC request, the second paragraph of SSAR Subsection 2.4.3.3 (pages 2.4.3-6 and -7), Rev 0 will be revised as follows:

The USACE model only covers the portion of the basin upstream of the USGS gage at Victoria, Texas. It does not include the drainage area from Coleto Creek, a tributary of the Guadalupe River, which joins the main river downstream of the gage at Victoria but upstream of the VCS site. The Coleto Creek Watershed, together with the Coleto Creek Dam/Reservoir are modeled by including the drainage areas given by the USGS at gaging station No. 08176900 (Reference 2.4.3-13) and by Halff Associates for the Coleto Creek Dam/Reservoir (Reference 2.4.3-6). The drainage area downstream of the Coleto Dam to its confluence with the Guadalupe River, the subbasin boundaries, and the elevation-storage-discharge relationships for the Coleto Creek Dam/Reservoir are those given in the NWS RFS for the Guadalupe River Basin near Bloomington, Texas (Reference 2.4.3-2). The storage of 149,800 acre-feet at elevation 120 feet NGVD 29~~elevation-storage relationships~~ for the Coleto Creek Dam shown in Tables 2.4.3-10

and 2.4.3-11 is ~~are~~ slightly different from the maximum storage of 169,000 acre-feet given in Subsections 2.4.1 and 2.4.4. Since the impact due to these differences is expected to be minor, ~~they~~ the values from Tables 2.4.3-10 and 2.4.3-11 are adopted in the VCS PMF model, consistent with ~~as given in~~ the NWS RFS model. In effect, the use of the lower storage value in the VCS PMF analysis produces a more conservative result because of the reduced flow attenuation due to storage effect.

The footnote for SSAR Rev 0, Table 2.4.3-11 will be revised as follows:

Source: U.S. National Weather Service River Forecast System for Guadalupe River Basin (Reference 2.4.3-2), with storage values interpolated from Table 2.4.3-10 (for elevations 98.5 feet NGVD 29 and higher).

Note: Elevations in Table 2.4.3-11 are given in terms of NGVD 29. To convert to NAVD 88, subtract 0.29 feet from the values shown in the table.

The third paragraph of SSAR Subsection 2.4.3.5 (page 2.4.3-13), Rev 0 will be revised as follows ("08188500" instead of "0818850"):

The USGS gaging station on the San Antonio River closest to its confluence with the Guadalupe River and with a long stream flow record for flood frequency analysis is at Goliad, Texas, USGS Gage No. 08188500). At this gage, the San Antonio River drains an area of approximately 3921 square miles (10,155 km^2), and has annual peak discharge records of 75 years (Reference 2.4.3-13). A flood frequency analysis is performed using these 75-years of data, assuming the Log-Pearson Type III distribution and following the formulations suggested by Rao and Hamed (Reference 2.4.3-24) and USGS Bulletin 17B (Reference 2.4.3-25). The 500-year flood peak discharge at Goliad is found to be approximately 164,000 cfs (4644 m^3/s).

Information Needs Item No. 52a:

NRC Request:

Please provide a SME to discuss, compare and contrast the differences in well drilling techniques and well testing including slug tests, pumping tests and borehole permeable tests. Also, please provide a SME to discuss the role of well construction on the test results, the many orders of magnitude difference in aquifer properties as listed on page 2.4-12 -28, the measurement approaches and best values for the site conceptual model, and the impact on the results due to the well construction and aquifer testing procedures.

Response:

The following information is provided in response to this information need, based upon discussions during the NRC hydrology audit. During the audit, it was noted that the detailed data being referenced in SSAR 2.4.12.2.4.3 is in the Geotechnical Exploration and Testing data report, which is included in Part 5 (Enclosures) of the ESP application. The NRC agreed that the text would be revised to add a reference to Part 5.

Associated ESPA Revision:

Paragraph 1 of SSAR Section 2.4.12.2.4.3 will be revised to read:

Based on the results of the geotechnical and hydrogeological testing the hydraulic conductivity values derived from grain size, aquifer pumping tests, and slug tests at the VCS site (included in Part 5 of the ESPA) are considered to be in agreement within the range of regional hydraulic conductivity values (Reference 2.4.12-16. Results of the statistical analysis also indicate that the slug tests have the greatest range of hydraulic conductivity.

Information Needs Item No. 66:

NRC Request:

Provide a SME to discuss the details concerning technical specifications and emergency operation requirements for NUREG Section 2.4.14.

Response:

The VCS ESP application (ESPA) SSAR will be revised in a future ESPA revision to add SSAR Section 2.4.14 – Technical Specifications and Emergency Operation Requirements, as described below.

Associated ESPA Revision:

The VCS ESPA SSAR will be revised in a future ESPA revision to add Section 2.4.14 as follows:

2.4.14 TECHNICAL SPECIFICATIONS AND EMERGENCY OPERATION REQUIREMENTS

The elevation of the power block (95 ft NAVD 88) at the VCS site is above the elevations associated with the probable maximum flood (65.9 ft NAVD 88, as provided in Section 2.4.3.7) and the design basis cooling basin breach flood (91 ft NAVD 88, as provided in Section 2.4.4.3.2); therefore, due to design there are no requirements for emergency protective measures designed to minimize the impact of hydrology-related events on safety-related facilities, and none are incorporated into the technical specifications or emergency procedures.

ATTACHMENT 4

SUMMARY OF REGULATORY COMMITMENTS

(Exelon Letter to USNRC, NP-11-0009, dated February 24, 2011)

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	Programmatic (Yes/No)
Exelon will revise the VCS ESPA SSAR Section 2.4.3 to incorporate the change shown in the enclosed response to the following NRC Information Needs Request: INH No. 8 (Attachment 1)	Revision 1 of the ESPA SSAR and ER planned for no later than March 31, 2012	Yes	No
Exelon will revise the VCS ESPA SSAR Section 2.4.12 to incorporate the change shown in the enclosed response to the following NRC Information Needs Request: INH No. 52a (Attachment 2)	Revision 1 of the ESPA SSAR and ER planned for no later than March 31, 2012	Yes	No
Exelon will revise the VCS ESPA SSAR Section 2.4.14 to incorporate the change shown in the enclosed response to the following NRC Information Needs Request: INH No. 66 (Attachment 3)	Revision 1 of the ESPA SSAR planned for no later than March 31, 2012	Yes	No