PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Friday, June 19, 2009 12:46 PM
To: Donald.Woodlan@luminant.com; cp34-rai-luminant@mnes-us.com; ComanchePeakCOL Resource
Cc: John.Conly@luminant.com; Eric.Evans@luminant.com; Matthew.Weeks@luminant.com; joseph_tapia@mnes-us.com; russell_bywater@mnes-us.com; Kallan, Paul; Tiruneh, Nebiyu; Barnhurst, Daniel; Ward, William
Subject: Hydrology site visit - July 7-9, 2009 Informational needs
Attachments: Hydrologic Safety Site Audit Information Needs.pdf

Don,

I have attached the information needs for our upcoming hydrology site visit.

thanks,

Stephen Monarque
U. S. Nuclear Regulatory Commission
NRO/DNRL/NMIP
301-415-1544

Hearing Identifier: ComanchePeak_COL_Public
Email Number: 287

Mail Envelope Properties (3DF2506A7257014AAC5857E5E852DEAC0756FC9A09)

Subject: Hydrology site visit - July 7-9, 2009 Informational needs
Sent Date: 6/19/2009 12:45:42 PM
Received Date: 6/19/2009 12:45:44 PM
From: Monarque, Stephen

Created By: Stephen.Monarque@nrc.gov

Recipients:
"John.Conly@luminant.com" <John.Conly@luminant.com>
Tracking Status: None
"Eric.Evans@luminant.com" <Eric.Evans@luminant.com>
Tracking Status: None
"Matthew.Weeks@luminant.com" <Matthew.Weeks@luminant.com>
Tracking Status: None
"joseph_tapia@mnes-us.com" <joseph_tapia@mnes-us.com>
Tracking Status: None
"russell_bywater@mnes-us.com" <russell_bywater@mnes-us.com>
Tracking Status: None
"Kallan, Paul" <Paul.Kallan@nrc.gov>
Tracking Status: None
"Tiruneh, Nebiyu" <Nebiyu.Tiruneh@nrc.gov>
Tracking Status: None
"Barnhurst, Daniel" <Daniel.Barnhurst@nrc.gov>
Tracking Status: None
"Ward, William" <William.Ward@nrc.gov>
Tracking Status: None
"Donald.Woodlan@luminant.com" <Donald.Woodlan@luminant.com>
Tracking Status: None
"cp34-rai-luminant@mnes-us.com" <cp34-rai-luminant@mnes-us.com>
Tracking Status: None
"ComanchePeakCOL Resource" <ComanchePeakCOL.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	215	6/19/2009 12:45:44 PM
Hydrologic Safety Site Audit Information Needs.pdf	38815	

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

Comanche Peak Units 3 and 4 COLA Review
Hydrologic Safety Site Audit Information Needs; July 7 - 9, 2009

Serial No.	FSAR Section	Information Needs	Reviewer
1.	General	Provide a subject matter expert to discuss source and availability of the spatially referenced data used for delineation of watersheds, representation of the basin, digital elevation, stream networks, location of the plant, landcover/landuse, soil type, surficial geology and aquifers.	B. T. Smith
2.	General	Provide a subject matter expert to discuss the projection/s and datum/s used for the maps referenced in FSAR. There are two vertical datums used NGVD29 and NAVD88 while one USGS gage 08091700 is reported to have no datum information.	B. T. Smith
3.	2.4.1	Provide a subject matter expert to discuss the consistency of plant grade level and structures systems and components elevation values given in Sections 2.4.1 (~823ft) and Section 2.4.5 (~822 ft)	B. T. Smith
4.	2.4.1	FSAR Section 2.4.1.2 pp 2.4-4 states that the most significant portions of the Brazos River Basin are those between Possum Kingdom Lake and Lake Whitney, including Lake Granbury. Describe the basis for determining this portion of the basin as the most significant.	B. T. Smith
5.	2.4.1	Provide a subject matter expert to discuss the consideration of proposed reservoirs both upstream and downstream of the site (as required in SRP 2.4.1).	B. T. Smith
6.	2.4.3	Provide a subject matter expert to discuss unit hydrograph development and verification, rainfall runoff and routing, PMF flood flow, and water level determinations. The subject matter expert should be prepared to discuss HEC-HMS calculations, a rationale for use of Snyder's unit hydrograph under PMF conditions, methods used to account for nonlinear basin response as described in FSAR Section 2.4.3.3, and the appropriateness of average precipitation losses used in the HEC-HMS modeling.	B. T. Smith
7.	2.4.3	Provide data, input, and configuration files for the flood routing calculations using HEC-RAS software. Provide an expert to explain the input data and discuss results.	B. T. Smith
8.	2.4.4	Provide data, input, and configuration files for the dam-break flood routing computations using Flowmaster software. Provide an expert to explain the input data and discuss results.	B. T. Smith

9.	2.4.4	FSAR section 2.4.1 mentions the existence of 44 dams in the basin and the number of dams used in the analysis of potential dam failures is limited to Morris Shepherd and De Cordova dams. Provide a subject matter expert to discuss the choice of dams for dam failure analysis, how the permutations were decided, and the inclusion of future potential dams both upstream and downstream of the proposed plant in domino failure analyses.	B. T. Smith
10.	2.4.5	Provide a subject matter expert to discuss the approach used in determining seismically/atmospheric-induced seiches/resonance in the Squaw Creek Reservoir (SCR).	B. T. Smith
11.	2.4.5	Provide a subject matter expert to discuss the relationship between the estimation of coincident waves in Section 2.4.3.6 and wave action in Section 2.4.5 in the SCR.	B. T. Smith
12.	2.4.6	Provide a subject matter expert to discuss the potential for hill-slope failure-generated tsunami-like waves in the SCR and consistency with the findings in Section 2.5.	B. T. Smith
13.	2.4.6	Provide a subject matter expert to discuss an assessment of landslide and slope-failure potentials on the shores of Squaw Creek Reservoir as a flood causing or tsunamigenic mechanism.	B. T. Smith
14.	2.4.7	Section 2.4.7 states that “the maximum water surface elevation during a probable maximum flood event is at 788.9 ft msl.” Provide a subject matter expert to discuss the consistency of this result with Section 2.4.3.6 (“the PMF and maximum coincident wind wave activity results in a flood elevation of 809.28 ft.”).	B. T. Smith
15.	2.4.7	Provide a subject matter expert to discuss the effects of the accumulated freezing days in January and December and ice-induced reduction in capacity of water storage in the safety-related essential (sometimes called emergency) service water system (ESWS) four wet mechanical draft cooling towers.	B. T. Smith
16.	2.4.11	The ESWS Cooling Tower makeup flow rate is 274 gpm per unit for Units 3 and 4 (~ total of 2192 gpm for eight tower units – four towers per unit). Provide a subject matter expert to discuss the periodicity of the makeup flow (continuous or periodic based on basin level, etc) and the relationship to the non-safety related cooling water system makeup and intake.	B. T. Smith
17.	2.4.12	Provide a subject matter expert to provide and discuss site-specific profiles of geology and aquifer units beneath the Comanche Peak Nuclear Power Plant.	D. Watson

18.	2.4.12	Provide a subject matter expert to present and discuss a summary table of all site-specific hydraulic conductivity values from slug tests, packer tests, pumping tests, and any other relevant hydraulic testing conducted. Also explain how the values selected for the travel time calculation demonstrate conservatism.	D. Watson
19.	2.4.12	Provide a subject matter expert to discuss planned construction activities which include; the planned removal of regolith/undifferentiated fill and bedrock, the planned placement of engineered fill, the addition of engineered features (such as drainage ditches, parking lots, roads, etc.) and the impact these will have on hydrologic processes such as infiltration, surface runoff, groundwater levels, hydraulic gradients and flow paths.	D. Watson
20.	2.4.12	Provide a subject matter expert to present and discuss hydrographs constructed showing groundwater levels in wells screened onsite. Please include data collected through May 2008 at a scale adequate to display variations or trends.	D. Watson
21.	2.4.12	Provide a subject matter expert to describe the precipitation conditions at the site (i.e., wet, normal or drought conditions) during the reported monitoring of groundwater levels and discuss the effect that a change in hydroclimatic conditions will have on the post-construction groundwater system.	D. Watson
22.	2.4.12	Provide a subject matter expert to discuss how groundwater levels and flow directions determined from onsite wells compare to those determined from regional wells in the vicinity of the site.	D. Watson
23.	2.4.12	Provide a subject matter expert to discuss the four groundwater flow path and travel time scenarios, and make available for reference and demonstration a map showing the start and stop location of each of the scenarios. Please also discuss the impact of construction related alterations to the site on these flowpaths.	D. Watson
24.	2.4.12	Provide a subject matter expert to discuss the range of effective porosities in the regolith/undifferentiated fill and underlying bedrock and explain how porosity values used in the travel time calculations demonstrate conservatism.	D. Watson
25.	2.4.12	Provide a subject matter expert to discuss planned dewatering activities during construction.	D. Watson
26.	2.4.12	Provide a subject matter expert to discuss the development and implementation of groundwater monitoring plan(s).	D. Watson

27.	2.4.12 2.4.13	Provide a subject matter expert to discuss the basis for the selection of the location of soil samples which were used to determine physical and chemical parameters affecting groundwater flow and liquid radioactive effluent transport and how these locations relate to potential groundwater flowpaths.	D. Watson
28.	2.4.13	Provide a subject matter expert to discuss prior or potential use of chelating agents and other chemicals that have the potential to alter transport characteristics of liquid radioactive effluents at or near the site.	D. Watson
29.	2.4.13	Provide a subject matter expert to discuss the potential for flow to offsite wells (displayed on Figure 2.4.-205) due to construction and post-construction activities, changes in the pumping rates of the wells associated with Units 1 and 2, and the presence of preferential flowpaths (as described in Reference 2.4-214 from the FSAR).	D. Watson
30.	2.4.13	Provide a subject matter expert to describe the development of alternate conceptual models of the site and the process used in the selection of the most conservative and plausible pathway.	D. Watson
31.	2.4.13	Provide a subject matter expert to discuss the applicability of using the calculations performed as part of the FSAR for Units 1 and 2 as the basis to eliminate conceptual models of vertical groundwater flow through the Glen Rose formation to wells in the Twin Mountains Formation from Units 3 and 4.	D. Watson
32.	2.4.13	Provide a subject matter expert to discuss the applicability of using the RATAF code to perform the accidental liquid radioactive effluent release analysis for Units 3 and 4 and demonstrate the conservative nature of site-specific parameters in the model input.	D. Watson
33.	2.4.13	Provide the input and output files from the accidental liquid radioactive effluent release analysis performed using the RATAF code.	D. Watson