

PMComanchePeakPEm Resource

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Sent: Friday, June 17, 2011 1:01 PM
To: Monarque, Stephen; Roy, Tarun; ComanchePeakCOL Resource
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Subject: 2011-06-17 Woodlan, NRC Hydrology Audit Open Items and Actions
Attachments: 2011-06-17 Woodlan Hydrology Audit Open Items-Summary and Response.pdf

Steve and Tarun,

At last week's hydrology audit, Luminant agreed to supply our list of action items. That list is attached. We are still planning on a conference call on 6/28 to clarify the issues to the extent necessary.

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Open Item	Subject	NRC Issue	Strategy Response	Notes
General				
OI 2.4.2-1	Flooding/Grading and Drainage	The NRC has questioned the applicant's evaluation of flooding and counter-flooding measures (OI 2.4.10-1 below) as a result of intense precipitation at CPNPP U3&4. The NRC is concerned with the applicant's flooding calculation's accounting for of all important controlling points on site which may result in flooding in localized areas of the plant. The NRC has also requested to see the revised grading and drainage plans and flooding calculations, which confirm that flooding is not an issue at the CPNPP U3&4 site. A confirmation that the current U1&2 are not impacted, should be provided as well. In addition, and to perform their own assessment, the NRC has requested a revised, 1 to 2 ft incremental scale for the site grading and drainage plans' contours	NRC noted that they intend to review all provided and applicable FSAR 2.4 material in detail in preparation for further discussion during the proposed 6/28 conference call (in Luminant will provide to the reading room a revised G&D site plan (Rev H) as well as a new Flooding Calculation 20 (Rev 4). Luminant will develop a re-graded site plan of the affected areas considered for flooding and a revised calculation 20 rev 4. Contours for the grading and drainage plans will be set at every 1ft or 2ft per NRC's request. Additionally Luminant will provide a supplement to RAI 139, Question No. 2.4.2.2 that will address potential issues related to hydraulic jumps, scour and erosion of storm water ditches to assure the integrity of safety related structures. Luminant will provide information with respect to ground covering and stormwater channel linings and will also address potential issues related to site delineation to clearly show what part of the site is encompassed in the G&D Plan for Units 3 and 4 and confirm that there is no impact to U1&2. As appropriate, the delineation between Units 1/2 and Units 3/4 with respect to drainage will be identified. The need for monitoring the drainage system via operator observations or periodic inspection The FSAR will be revised accordingly.	Closing this item will close OI 2.4.2-10
OI 2.4.10-1	Flooding Counter Measures	See OI 2.4.2-1 above	This section and respective RAI response will be supplemented as needed based on results from above item OI 2.4.2.2 . It may be more appropriate to provide the input discussed in the OI above respect to scours, erosion, and channel lining, to this section.	Superseded by OI 2.4.2-1 , however if calculation and G&P are still not satisfactory after revision, this section will need to be supplemented to provide a discussion of mitigative measures.
OI 2.4.12-1	Conceptual water balance model	The NRC is requesting a comprehensive summary describing a conceptual model of the sites hydro-geology. The conceptual model for water balance should include specified inputs (recharge, runoff accumulation, surface water flow through pipes and backfill, hydraulic conductivities) and outputs (groundwater flow to SCR, flow through fill and existing rock, vertical flow, drains, on-site drainage and basins, water levels, mounding) . Additionally, the description of the hydrogeologic model should also address the fluctuation of groundwater due to surface water and flood water infiltration. A clear water balance should show how water flows through the site above ground and below ground, and the water balance should also include the amount of water flowing through the site. A summary tying in all discussions in 2.4.12 should be provided at the beginning of the section to help the reader in maneuvering through the section.	Luminant will provide a supplement to RAI 147, Question No. 2.4.12-8 and update the COLA to provide an overarching description of the hydrogeologic model and provide water balance for water above and below the grade (response based on green items). To the extent reasonable, the physics of the model will be identified in the description. Actual volumes of water will not be possible based on the currently available data from the site investigation and the analysis will need to be more qualitative than quantitative. Quantitative analysis will be used where data is available and appropriate. Effects such as potential mounding will be addressed. Luminant will investigate other plants such as Lee and NA3 and review NUREG-CR-6085 Luminant will develop information with respect to ground coverage, pipe water stops, channel linings, and drains As this response is revised, Luminant will confirm that 2.4.13 tank failure analysis is not impacted. Additionally, Luminant will provide a supplement to RAI 22, Question 02.05.04-11 and revise at the CPNPP site.	
OI 2.4.12-2	Aquifer Parameters	See OI 2.4.12-3 and OI 2.4.12-5 below	Superseded by OI 2.4.12-3 and OI 2.4.12-5	
OI 2.4.12-3	Upward Recharge	The NRC is requesting that the applicant consider upward recharge in the Glen Rose formation. The NRC is requesting the applicant to demonstrate that the scenario where groundwater recharges the wells is not an issue.	Luminant will look into the potential of water migrating along bedding planes (not intersecting the surface perimeter drain trench) from current groundwater recharge locations (south and west) into the engineered fill within the plant area. If upward recharge is an issue, Luminant will assess mitigative measures to prevent this from occurring. Luminant will provide a supplement to RAI 147 and the FSAR. Mitigative measures (monitoring, pumping, internal drainage) will also be considered as appropriate. As this response is revised, Luminant will confirm that 2.4.13 tank failure analysis is not impacted.	Closing this item will partially close OI 2.4-12-1
OI 2.4.12-4	Pathway travel time	NRC requested information related to potential pathways that was omitted in FSAR 2.4.12. NRC also needed some additional information on permeability and hydraulic conductivity, justified in RAI responses as conservative.	Closed-confirmatory: The information was revised and provided to the NRC via FSAR UTR R7 . Further permeability and hydraulic conductivity information was provided to the NRC on the reading room.	

OI 2.4.12-5	Vertical Transport of Contaminants	The NRC is concerned with the potential vertical transport of contaminants. The NRC is requesting that vertical transport of contaminants be evaluated in order to determine how long it will take for vertical transport to occur and ensure that potential dose to the public meets 10CFR Part 20. The NRC would like a calculation to include both vertical transport through the Glen Rose and subsequent horizontal transport from the bottom of Glen Rose to SCR. ----- The NRC had a concern that some of the text additions provided in the FSAR were not provided in the ER.	Luminant will evaluate the vertical transport pathway velocity and compare conservative (Darcian) flow models with more realistic (diffusion) flow models. MNES will carry out a simple calculation on vertical transport, diffusion or invasion of contaminants through the Glen Rose formation. The output from this calculation will be used to verify that the horizontal transport to SCR is the most conservative case. The information obtained from this analyses will be supplemented to RAI 147 Question No. 2.4.12-14 and included in the FSAR. ----- No Action: The ER has already been updated in ER UTR R6	Closing this item will close OI 2.4.13-1, OI 2.4.13-2 and partially close OI 2.4-12-1
OI 2.4.12-6	Groundwater level changes due to seismic activity	The NRC is concerned with potential groundwater level changes resulting from seismic activity. The NRC is requesting that a calculation be carried out that provides information on how seismicity would raise groundwater levels (provide quantitative values) or provide a statement addressing why this would not be an issue.	Luminant will provide a qualitative statement from information that has been gathered that indicates that there is a very low possibility of seismic activity raising groundwater levels to heights that would be harmful to the site. Luminant will supplement to RAI 147 or provide a description for OI 2.4.12-1	
OI 2.4.13-1	Conceptual models of accidental releases	See OI 2.4.13-3 below	Overlaps with OI 2.4.12-5 and superseded by OI 2.4.13-3 below.	Overlaps with OI 2.4.12-5 and superseded by OI 2.4.13-3
OI 2.4.13-2	Conservative analysis of accidental releases	The NRC has an issue with the mention of U1&2 soil properties in FSAR 2.4.13.	Overlaps with OI 2.4.12-5; see OI 2.4.12-5 above. References to U1&2 were updated via the response to RAI 145.	Overlaps with OI 2.4.12-5
OI 2.4.13-3	Transport pathways of postulated release	The NRC is concerned about the contaminant delivery to the SCR (horizontal pathway), and potential arithmetic errors with respect to selected pathways. The NRC also is concerned with transport pathways issues and that the transport in the form of a plume rather than a slug was not taken into account. NRC is requesting that all assumptions need to be supported and confirmed to be conservative. NRC has an action to review this section again	The NRC noted that they intend to review this section again There are no arithmetic errors and table listing the pathways has been revised (related to OI 2.4.12-4), the information was provided in both FSAR UTR R7 and ER UTR R6. Luminant will supplement RAI 145 response. Issues to be addressed are: transport pathway issues, dilution in groundwater and SCR, contamination into storm basins, provide basis for volume in existing ill dispersion calculation, describe leak path, discuss realistic expectations wrt flow-path, expected tank leakage (cover each stages of the tank failure).	Overlaps with OI 2.4.12-4