

Norman, Yolande

From: Norman, Yolande
Sent: Monday, July 01, 2013 3:32 PM
To: Dixon, Earle, NMENV; Janet Brooks (Brooks.Janet@epamail.epa.gov)
Cc: Chang, Lydia; Norman, Yolande
Subject: RE: 2013 UNC FYR Interview Questions
Attachments: 2013 UNC FYR NRC Interview Questions.yn.responsesdoc.pdf

Hi Earle and Janet,

Attached is the NRC's response to the 2013 UNC FYR Interview Questions.

Feel free to call me if you have any questions.

Yolande

*Yolande J.C. Norman, Project Manager
Division of Waste Management
and Environmental Protection
U.S. Nuclear Regulatory Commission
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Washington D.C. 20555-0001
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Email: Yolande.Norman@nrc.gov*

From: Dixon, Earle, NMENV [<mailto:Earle.Dixon@state.nm.us>]
Sent: Tuesday, April 30, 2013 2:55 PM
To: Norman, Yolande
Subject: 2013 UNC FYR Interview Questions
Importance: High

Hello Yolande,

I know you are a busy gal, but hopefully this isn't going to be too much work for you & me. Have you had a chance to think any more about or work on the 2013 UNC Five Year Review interview questions?

I welcome NRC to provide written responses to the questions if that is preferable, but we could do the interview over the phone to make things easier & faster. I am hoping to complete the interviews this week. I can call you to go through the interview questions, but here they are again. I've also attached a copy of the NRC 2008 UNC FYR interview question response by Paul Michalak for your handy reference.

Please let me know which way you want to proceed. I have time to do the interview questions over the phone which should only take about 20-30 minutes.

Thanks,

Earle

505-827-2890

2013 United Nuclear Corporation (UNC) Five-Year Review Interview Questions

Date: July 1, 2013

Interviewer: Earle Dixon, New Mexico Environmental Department (NMED is the Support agency to the U.S. Environmental Protection Agency - Region 6)

Person or Entity Interviewed: Yolande Norman, Project Manager, U.S. Nuclear Regulatory Commission, Mail Stop T8-F5, Washington D.C. 20555-0001

1. What is the U.S. Nuclear Regulatory Commission's (NRC's) role on this project?

Between 1974 and June 1986, the UNC Church Rock Mill site was under the jurisdiction of New Mexico that derived its regulatory authority from the Atomic Energy Commission (AEC) Agreement State Program. The AEC is the precursors to the U.S. Nuclear Regulatory Commission (NRC). Regulatory authority for uranium mill and uranium recovery sites, including the UNC Church Rock Mill Site was returned to the NRC at the request of the Governor of New Mexico. In June 1986, the NRC issued a source material license – SUA-1475 to United Nuclear Corporation (UNC). The licensee (i.e. UNC) must comply with stipulated license conditions, which include groundwater quality standards for all three water bearing zones; (i) Southwest Alluvium, (ii) Zone 1, (iii) and Zone 3.

2. What is the NRC's overall impression of the ground water remediation effort at the Site?

UNC has made a valiant effort to continually characterize and perform remedial actions within the three-water bearing zones (i.e. Southwest Alluvium, Zone 1, and Zone 3) using the best available technology. Currently a small scale groundwater extraction system operates on-site. However, this and any other active groundwater remediation technology is challenged by the low rate of recharge. Groundwater remediation has effectively reduced the overall mass of constituents in each of the water-bearing zones. The project manager, Ms. Norman is of the opinion that the remediation effort is fast approaching the threshold of technical impracticability.

3. From the NRC's perspective, what effects have Site operations had on the surrounding community?

There has not been any quantitative adverse affects to the local community resulting from Site Operations. This is a sparsely populated area with a few regulated drinking water wells in the vicinity of the Site. There have been no impacts to drinking water sources off-site. Also, in accordance with their license condition,

UNC continue to provide Annual Land Use Reports, documenting land use activities and significant events within a 2 mile radius of the UNC Church Rock Mill site. In addition, UNC submit their Annual As Low as Reasonable Achievable (ALARA) Audits that describe their radiological monitoring programs and efforts to maintain exposure to radiation as far below the dose limits consistent with the purpose for its licensed activity, taking into account the wider socio-economic benefits and the benefits in relation to public health and safety.

Since the last 5-year review the significant event in the vicinity of the UNC Church Rock Mill Site has been the interim soil removal action in nearby communities by the EPA-Region9. This activity is related to the Northeast Church Rock Mine site that is under the jurisdiction of EPA Region 9.

4. Is the NRC aware of any community concerns regarding the Site or its operation and administration? If so, please give details.

The overarching concern of the community is the potential for the transfer of legacy mine waste from the Northeast Church Rock to the UNC Church Rock Mill Site. Of concern is whether the additional weight of the mine waste will cause consolidation within the tailings impoundment exacerbating groundwater conditions and whether the groundwater plume will expand.

The community has also expressed displeasure in the slow pace of the remediation efforts and their desire that the groundwater be returned to pristine conditions.

5. Have there been any complaints, violations, or other incidents related to the Site that required a response by the NRC? If so, please describe the events and results of the responses.

No violations to the license were noted during the NRC's past two site inspections conducted in 2009 and 2011.

6. Have there been routine communications or activities (e.g., site visits, inspections, reporting activities, etc.) conducted by the NRC regarding the Site? If so, please describe purpose and results.

Since the previous five-year review, the NRC Region IV inspectors performed biennial inspections in May 2009 and August 2011. These inspections were performed to determine if activities at the UNC Church Rock Mill site complies with the NRC's rules and regulations and the stipulated conditions of the NRC license. The inspectors determined that UNC/GE was conducting site activities in accordance with the NRC's regulatory and license requirements. The NRC has also conducted site visits in 2009, 2010, and 2011. The next biennial inspection of the UNC Church Rock Mill Site will occur in mid- to late-2013.

In December 2012, the NRC proposed minor administrative revisions to the existing Memorandum of Understanding and these changes were accepted by the EPA in March 2013. In October 2012, the NRC began providing quarterly progress report to the EPA on the status of the UNC Church Rock Mill site remediation effort to achieve groundwater protection standards.

7. Is the ground water remedy progressing in accordance with the NRC's expectations for the Site? Please explain.

The remediation of groundwater is typically not a simple effort and the difficulties of such an effort are exemplified by the UNC Church Rock Mill site due to hydrogeologic and geochemical complexities, past industry practices, and, scant environmental and regulatory requirements in the past.

The groundwater extraction effort in Zone 3 continues to provide diminishing extraction rates resulting in reduced hydraulic control of the plume due to the elevation of the water table being controlled by the dipping bedrock surface at the extraction locations. The NW-series extraction wells located north of monitoring well NBL-1 have provided containment of the seepage impacted water in Section 36. Sodium bicarbonate injection began in well IW A during April of 2011, but injection rates progressively declined and the injection of sodium bicarbonate was terminated in June 2011. The groundwater remedial efforts have been significant in Zone 3, but progress has been slower than initially anticipated.

Groundwater data continues to be analyzed in the Southwest Alluvium to monitor the effectiveness of natural attenuation. The results of the natural attenuation testing continue to be promising and are progressing within the NRCs expectations.

Groundwater extraction was discontinued for Zone 1 in 1999 due to steadily declining productivity of groundwater extraction rates over the 15 year effort that began in 1984. Historically the groundwater flow was approximately eastward due to mounding and recharge that occurred from the borrow pits and the alluvium to the west. Dewatering of Burrow Pit Number 2 and termination of mine effluent discharged into Pipeline Arroyo has reduced the groundwater mound and changed the groundwater flow direction to follow the northerly dip of the Zone 1 sandstone.

Overall, the NRC believes that the remedial effort is progressing as expected based on the stable to reducing concentrations observed in each water-bearing zone.

8. Is the NRC aware of opportunities to optimize the operation, maintenance, or sampling efforts at the Site?

Optimization is always an ongoing effort during groundwater remedial efforts and UNC/GE continues to optimize all aspects of their efforts as the corrective action

progresses. The NRC is not aware of any other opportunities to optimize the corrective action efforts.

9. From NRC's perspective, have any of the changes in Site operations had an affect on the protectiveness or effectiveness of the ground water remedy? Please explain.

No changes at the Site have affected the protectiveness of the remedy.

10. Have there been any changes in NRC standards since the time the remedial approach was delineated which may call into question the protectiveness or effectiveness of the ground water remedy?

No. There have not been any changes to the NRC groundwater protection standards, but changes to the background values used for site specific standards have been modified in the past, as mentioned in the 2008 five-year review interview. In December 2008, UNC submitted a license amendment request to; apply alternate concentration limits in Zone 1 of the Lower Gallup Sandstone, reduce the sampling frequency for the entire compliance groundwater monitoring network and, designate the point-of-exposure as off-site using two point-of-compliance wells in Section 1. In April 2009, the NRC placed this amendment request in abeyance pending the completion and submittal of the Site Wide Supplemental Feasibility Study requested by the EPA-Region 6.

In April 2012, UNC submitted a license amendment request supplemented by a groundwater flow model in October/November 2012, to update some of the current site specific groundwater protection standards by applying background threshold values to three water bearing zones. This license amendment request is currently under review by the NRC. The NRC evaluates each request based on its technical merits and potential health effects and environmental impact before granting the amendment.

11. What is the status of the NRC license for the Site?

The NRC license is active, and there are a number of conditions that UNC must meet, which includes groundwater protection standards. The UNC license is in good standing and UNC continues to maintain the annual update to their financial surety.

12. Does the NRC feel well informed about the Site's ground water cleanup activities and progress?

The NRC believes that it has been well informed regarding the Site's groundwater cleanup activities and progress. The Site is inspected every two years and the NRC is kept apprised of the groundwater monitoring program via annual and semiannual reports that are prepared to encompass all sampling results, site activities, and future recommendations to optimize the ongoing corrective actions. In addition the NRC staff meets with the stakeholders including (i.e. EPA – Region 6, EPA Region 9, UNC, New Mexico Environmental Department (NMED), Department of Energy – Office of Legacy Management (DOE-LM), Navajo Nation EPA (NNEPA)] via teleconferencing on a regular basis and face-to-face on an annual basis for technical discussions to assess the status of the groundwater remediation effort.

13. Does the NRC have any comments, suggestions, or recommendations regarding the Site's management or operation?

The NRC believes that UNC has made a good faith effort to progressively conduct decommissioning activities. It is anticipated that of the three water-bearing zones, Zone 3 remediation effort will continue to remain a challenge, which could be further complicated if it is ascertained that the groundwater contaminant plume has migrated off-site beyond UNC's private property.

The complexity of fulfilling the requirements of State, Tribal, and Federal agencies to ensure that all requirements are satisfied prior to license transfer to the long-term care custodian will require continued interagency discussions among the NRC, the DOE-LM, EPA-Region 6, EPA – Region 9, NNEPA and, NMED.

On a long-term basis UNC and all the regulatory stakeholders will need to enhance its community relations with the local community and the Navajo Nation in seeking creative solutions to address final groundwater conditions after the remediation effort has been exhausted (e.g. exploring conventional and unconventional methods of institutional controls).

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