Norman, Yolande

From: Mark Jancin [mjancin@chesterengineers.com]
Sent: Tuesday, October 26, 2010 10:02 AM
To: Coltrain.Katrina@epamail.epa.gov
Cc: Norman, Yolande; Dixon, Earle, NMENV; Eugene Esplain; Purcell.Mark@epamail.epa.gov; Guo, Lifeng; Bush, Larry (GE Infra, Aviation, US); Blickwedel, Roy (GE, Corporate); James Ewart; Robert Warren; Milburn.Anna@epamail.epa.gov
Subject: RE: risk assessment approach conf call
Attachments: UNC RA Agenda 10-12-10.doc

Follow Up Flag: Follow up
Flag Status: Flagged

Katrina, the agenda for this call was sent earlier on October 10 but is also attached here. Our call is set for 11:00 am Eastern Time (9:00 Mountain Time) on Monday, November 1.

The context is EPA's comments letter to UNC of September 2, 2010. We expect the call to last approximately 2 hours.

We can use the following call-in numbers:

Call-in (800) 728-9607. Access = 4697641#

Mark

From: Coltrain.Katrina@epamail.epa.gov [mailto:Coltrain.Katrina@epamail.epa.gov]
Sent: Monday, October 25, 2010 1:16 PM
To: Mark Jancin
Cc: Yolande Norman; Dixon, Earle, NMENV; Eugene Esplain; Purcell.Mark@epamail.epa.gov; lifeng.guo@nrc.gov; Bush, Larry (GE Infra, Aviation, US); Blickwedel, Roy (GE, Corporate); James Ewart; Robert Warren; Milburn.Anna@epamail.epa.gov
Subject: Re: risk assessment approach conf call

Mark, will you be sending an agenda and the call information for the conference call set on November 1?

thanks

Katrina Higgins-Coltrain
Remedial Project Manager
USEPA Superfund
Louisiana/New Mexico/Oklahoma Section (6SF-RL)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202
214-665-8143
214-665-6660 (fax)

From: Katrina Coltrain/R6/USEPA/US
To: "Mark Jancin" <mjancin@chesterengineers.com>
Date: 10/12/2010 09:10 AM
Subject: Re: risk assessment approach conf call

I am available all listed dates and times.

Katrina Higgins-Coltrain
Remedial Project Manager
USEPA Superfund
Louisiana/New Mexico/Oklahoma Section (6SF-RL)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202
214-665-8143
214-665-6660 (fax)

From: "Mark Jancin" <mjancin@chesterengineers.com>
To: Katrina Coltrain/R6/USEPA/US@EPA, "Yolande Norman" <Yolande.Norman@nrc.gov>, "Dixon, Earle, NMENV" <Earle.Dixon@state.nm.us>, "Eugene Esplain" <e.esplain@yahoo.com>
Cc: Mark Purcell/R6/USEPA/US@EPA, <lifeng.guo@nrc.gov>, "Bush, Larry (GE Infra, Aviation, US)" <larry1.bush@ge.com>, "Blickwedel, Roy (GE, Corporate)" <Roy.Blickwedel@ge.com>, "James Ewart" <jewart@chesterengineers.com>, "Robert Warren" <rwarren@chesterengineers.com>
Date: 10/12/2010 08:59 AM
Subject: risk assessment approach conf call

Hello folks – the attached agenda from UNC is toward a conference call to discuss various risk assessment developmental issues. The context is EPA's comments letter to UNC of September 2, 2010. We expect the call to last approximately 2 hours.

We propose holding the call on one of the following alternate dates (to be selected): October 28 or 29 (Thursday or Friday), or November 1 or 2 (Monday or Tuesday). Given as much as a two-hour time difference between us, the start times might alternately be 11:00 am Eastern Time (9:00 am Mountain Time); or 1:00 pm Eastern Time (11:00 pm Mountain Time); or 3:00 pm Eastern Time (1:00 pm Mountain Time). (These are rounded blocks of time; there's no reason we can't start on the half-hour.)

Please contact me with your closed/unavailable dates and times (selected from those above), and we'll converge on the schedule that works best for everyone.

Mark

Mark Jancin, Ph.D., P.G.
Project Manager

Chester Engineers, Inc.
1315 West College Ave., Suite 100
State College, PA16801
Ph: 814-231-2170 x 20
Fax: 814-231-2174
mjancin@chesterengineers.com
www.chesterengineers.com

"Celebrating 100 years providing clean water and environmental solutions to the world"

[attachment "UNC RA Agenda 10-12-10.doc" deleted by Katrina Coltrain/R6/USEPA/US]

TELECONFERENCE AGENDA

UNC CHURCH ROCK MILL AND TAILINGS SITE

TOPIC: RISK ASSESSMENT APPROACH

PLANNED OCTOBER/NOVEMBER 2010

PARTICIPANTS: EPA/NRC/NNEPA/NMED/UNC/CHESTER

Objective: Discuss/resolve issues/questions/approach related to requested risk assessment task.

Strategy: Discuss issues to resolve risk assessment approach, table issues that are unresolved in allotted time.

Total Time: Approximately 2 hours.

1. Introductions – *5 Minutes*

a. Identify EPA/NRC contacts for risk assessment questions during the preparation of the risk assessment.

2. Objectives – *30 Minutes*

a. EPA risk assessment objective

- What is EPA's principal objective for requiring the risk assessment and how will results be used? Comment 18 of the EPA September 2, 2010, comment letter (Comment Letter) indicates that the "historic assessment may no longer provide adequate assessment of the risk under current Site conditions." However, the most recent 5-Year Review Report (EPA, 2008) states that the, "…ground water operable unit remedy for the Site remains protective…"

ACTION REQUIRED – Agree on objectives of risk assessment work and future use of risk assessment results.

b. NRC risk assessment (i.e., exposure assessment) objectives. Comment Letter indicated that "For the NRC, the exposure assessment component of the risk assessment should also identify a POC and POE concentration" and that "It should determine the maximum permissible levels of COCs at the POC that are protective of human health and the environment at the POE."

- Is it appropriate to establish POE-POC concentrations for risk calculations at the current time (acknowledging that POCs only have been established for each of the hydrostratigraphic units, and POEs have only been proposed for Zone 1 in 2008 ACL application)?

- The calculation of maximum permissible levels of COCs at the POC that are protective of human health and the environment at the POE require chemical fate and transport calculations. Also, it may be premature without the concurrent proposal of an ACL or corrective action alternative.
- A separate discussion is needed to frame out a scope, with particular concern about limitations and a proposed approach to show theoretical limits to the Zone 3 plume's advance.

ACTION REQUIRED – Agree on objectives of risk assessment calculations for NRC related to POE-POC. UNC will provide status update regarding COPC transport calculations for Zone 3.

3. COPC Selection – *20 Minutes*

a. For risk assessment calculations, UNC intends to use the datasets from which approved EPC concentrations and background concentrations were calculated in 2008 (i.e., risk assessment dataset).

ACTION REQUIRED – Agree on data to be used for risk assessment.

b. For non-radionuclide COPC selection, maximum concentrations for each contaminant, hydrostratigraphic unit, and exposure pathway (e.g., arsenic in Zone 3 groundwater under a domestic water use scenario) will be screened against appropriate EPA Regional Screening Level (RSL) Table values.

- A direct comparison of the RSL and the maximum contaminant concentration will be made for carcinogenic compounds.
- For non-carcinogenic compounds, the maximum contaminant concentration will be compared against one-tenth of the RSL (per EPA guidance).
- Compounds that exceed their screening values will be selected as COPCs for the specific hydrostratigraphic unit and exposure pathway.
- Uranium will be included as both a non-radionuclide and a radionuclide where appropriate.

ACTION REQUIRED – Agree on screening approach.

c. For radionuclide COPC selection, maximum concentrations for each contaminant, hydrostratigraphic unit, and exposure pathway (e.g., thorium-230 in Zone 3 groundwater under a domestic water use scenario) will be screened against EPA Radionuclide Preliminary Remediation Goal (PRG) values.

- A direct comparison of the PRG value and the maximum contaminant concentration will be made.
- Compounds that exceed their screening values will be selected as COPCs for the specific hydrostratigraphic unit and exposure pathway.

ACTION REQUIRED – Agree on screening approach.

d. Common ions (e.g., sulfate, chloride) and other inorganic compounds that do not have screening levels in RSL Tables will not be included in quantitative assessment.

ACTION REQUIRED – Agree on screening approach.

e. Background concentrations - COPCs that are present in both impacted and background groundwater will be included in the quantitative risk assessment calculations for the seepage-impacted groundwater (i.e., background concentrations are not proposed for use to screen/eliminate COPCs). However, background concentrations will be used, qualitatively and/or quantitatively, in the overall assessment of risk associated with background concentrations of groundwater COPCs.

ACTION REQUIRED – Agree on background approach.

4. Exposure Assessment (for EPA risk assessment) – *40 Minutes*

a. In Comment Letter, EPA requested "evaluation of potential exposure through the inhalation pathway associated with the evaporation ponds." UNC proposes the elimination of this potential exposure pathway from consideration for the following reasons:

- The operation of the evaporation ponds and the monitoring of potential radionuclide emissions are conducted within Section 2 under the direction of the NRC, pursuant to the facility's NRC Source Materials License.
- Most of the non-radiologic site COPCs are inorganic compounds that would not migrate from water to a receptor via the inhalation pathway and the only volatile compound detected in site groundwater, chloroform, has limited presence at very low mean concentrations.
- Based on current land use in the vicinity of the site, the future potential exposure to COPCs present in the evaporation ponds via the inhalation pathway is expected to be de minimis.

ACTION REQUIRED – Agree on status of inhalation exposure pathway associated with the evaporation ponds.

b. Exposure scenarios

- Land use in the area has not changed in the last 30 years, and there are no users of impacted groundwater in the vicinity of the site.
- There is only one potential exposure scenario anticipated to be included in the risk assessment: the hypothetical future exposure to impacted groundwater used as a domestic potable water supply. This will consider the unlikely scenario that a well is installed for domestic use in locations immediately outside Section 2 where the groundwater has been impacted by tailings seepage (i.e., in Section 36 [Zone 3], Section 1 [Zone 1] or Section 3 [SWA]). Standard exposure assumptions will be used for this exposure scenario.
- UNC considered and dismissed an exposure scenario to evaluate hypothetical future secondary human exposure from consumption of meat or milk (i.e., food pathway) from livestock watered with groundwater that has been impacted by tailings seepage. The scenario was dismissed for the following reasons: (1) exposure would be insignificant compared to hypothetical use of impacted water as a domestic water supply, (2) the land use survey indicates it is not a current or anticipated exposure pathway because there are no impacted livestock watering wells, and (3) there is significant uncertainty related to exposure assumptions for this hypothetical exposure scenario (e.g., percentage of local consumption of local meat/milk products, likelihood that livestock would drink impacted water, bioaccumulation factors).

ACTION REQUIRED – Agree on exposure scenarios and exposure assumptions to be included in assessment.

c. Dermal exposure pathway – the EPA Comment Letter indicated that the updated risk assessment should include relevant Risk Assessment Guidance for Superfund (RAGS) revisions, including evaluation of the dermal exposure pathway. UNC will include the dermal exposure pathway associated with domestic potable water supply use scenario, as is appropriate for the individual COPCs.

- The dermal exposure pathway is not anticipated to be important for most COPCs. USEPA guidance will be utilized to determine whether dermal uptake of a contaminant in a domestic water supply would contribute a significant dose relative to oral exposure. For the dermal-water pathway, only those chemicals which contribute to more than 10% of the dose from the oral (drinking water) pathway will be considered important enough to carry through the risk assessment.

- The skin is generally an effective barrier against absorption of radionuclides and the dermal absorption exposure pathway is considered very minor with respect to other exposure routes, such as

ingestion/inhalation. Therefore, dermal exposure pathway for radionuclides will not be included in screening evaluation or the quantitative risk assessment.

ACTION REQUIRED – Agree on approach for evaluation of dermal exposure to COPCs.

d. Inhalation exposure pathway — the EPA Comment Letter indicated that the updated risk assessment should include relevant RAGS revisions, including evaluation of the inhalation exposure pathway. UNC will include the inhalation exposure pathway associated with domestic potable water supply use scenario, as is appropriate for the individual COPCs.

- Although the inhalation pathway is not anticipated to be important for most COPCs under the domestic water use scenario, UNC will include the pathway for appropriate COPCs (e.g., radium, chloroform).

ACTION REQUIRED – Agree on approach for evaluation of inhalation exposure to COPCs.

5. Exposure Assessment (for NRC) – *30 Minutes*

a. UNC to provide status update regarding COPC transport calculations for Zone 3.

ACTION REQUIRED – None at this time. A separate discussion is needed to frame out a scope, with particular concern about limitations and a proposed approach to show theoretical limits to the plume's advance.

6. Toxicity Assessment – *5 Minutes*

a. Toxicity factors used in the risk assessment will be selected in accordance with EPA's Superfund program hierarchy of human health toxicity values (EPA, 2003).

b. Toxicity factors for non-radionuclide COPCs (and for the chemical toxicity of uranium), including reference doses for non-carcinogenic COPCs and cancer slope factors, will be obtained from the current EPA RSL Table. The toxicity values used as "defaults" in the RSL table are consistent with the 2003 EPA guidance.

c. Toxicity factors for radionuclides will be the cancer slope factors (risk coefficients for total cancer morbidity) tabulated in the Health Effects Assessment Summary Tables (updated as of April 2001).

ACTION REQUIRED – Agree on approach for selecting toxicity factors.