From:	Barr, Cynthia
To:	Zadins, Zintars
Cc:	Snyder, Amy; Maloney, Moira; Krentz, Martin
Subject:	RE: Climate Change and PA"s
Date:	Friday, September 04, 2015 8:46:34 AM

Hi there Zintars:

Great to hear from you! Yes, my summer has been wonderful—hope you had a great summer too!

Thanks for your email. In fact, we did just publish draft guidance that has some information on the specific topic of climate change that you are interested in. Please see draft NUREG-2175 “Guidance for Conducting Technical Analyses for 10 CFR Part 61”, which should provide you additional information in this area. A link to the document is provided below for your convenience. Additionally, it is not too late to comment, if you are interested (comments are due later this month on September 21).

http://pbadupws.nrc.gov/docs/ML1505/ML15056A516.pdf

In general, we are not looking for the impossible—for one to predict future climate change--but rather to consider how climate change may impact the performance of a facility particularly those facilities that have long-lived waste. For instance, consideration of alternative scenarios, such as the ones performed by West Valley in its erosion modeling in the FEIS, will help answer climate change impact questions (e.g., wetter climate + fast creep scenario evaluated for the erosion modeling). In a nutshell, our guidance is asking for consideration of how climate change may impact exposure scenarios (e.g., currently inhabitable land in a dry/hot climate may change to more habitable land under a wetter/colder climate; non-potable or low yield aquifers may become more productive and support groundwater dependent pathways in a future climate; or consideration of how changes in climate and precipitation rates may lead to changes in irrigation rates). Features, events, and processes (FEPs) such as climate change may also need to be considered in alternative conceptual models and scenarios. For example, climate change may lead to increased vulnerability of a facility to flooding, changes in groundwater flow patterns, increased erosion rates, changes in the number of freeze/thaw cycles, or changes to vegetation and impacts on engineered barrier performance. Additionally, analysts should consider how the rate of change (and spatial and temporal averaging) may affect the results.

Again, I think West Valley is generally on the correct path with its erosion modeling work and consideration of uncertainty in the modeling predictions based on uncertainty in past (as it impacts calibration and selection of best fit parameter values) and future climate assumptions. Phase 1 studies should provide additional support for the PA modeling with the collection of additional information to help refine the models and allow for a more thorough consideration of uncertainty in erosion modeling results.

Feel free to contact us any time with additional questions. We look forward to speaking with you more on this issue!

Talk soon,
Cynthia

From: Zadins, Zintars [mailto:Zintars.Zadins@wv.doe.gov]
Sent: Wednesday, September 02, 2015 11:07 AM
To: Barr, Cynthia
Cc: Snyder, Amy; Maloney, Moira; Krentz, Martin
Subject: [External_Sender] Climate Change and PA's

Good Morning Cynthia,

Hope you are doing well and had a great summer. The DOE will soon be awarding a contract to perform probabilistic modeling to support Phase 2 decision making for the WVDP and WNYNSC. The contract will be jointly funded by the DOE and NYSERDA. Tasks associated with the contract include performing a sensitivity analysis of the 2010 FEIS deterministic performance assessment (DPA) to identify sensitive input parameters that will be the focus of additional near-term data collection, transitioning the DPA to a probabilistic modeling platform, evaluating potential Phase 2 decommissioning alternatives, and performing a long-term probabilistic performance assessment (PPA) to support development of the Phase 2 Supplemental Environmental Impact Statement (SEIS) for the WVDP and WNYNSC.

Recently stakeholder groups have been requesting that the agencies incorporate climate change planning into our Phase 2 decision making process in response to a number of severe weather events that have affected the WNYNSC and surrounding areas. DOE's planned approach to evaluating climate change in the upcoming SEIS will be consistent with the December 2014 *"Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews"* prepared by the Council on Environmental Quality (CEQ). However, prior to starting work on the PPA contract, DOE would like to know what NRC's position is on incorporating climate change in the development of long-term performance assessments for sites such as West Valley and the WNYNSC. Are there any NRC guidance documents that address the evaluation and incorporation of climate change impacts in long PA's?

The 2010 FEIS and DPA analyses evaluated long-term impacts and peak doses beyond 1,000 years at the WVDP and WNYNSC as recommended in the NRC's Final Policy Statement on the Decommissioning Criteria for the West Valley Demonstration Project. It is DOE's assumption that the recommendation to evaluate long-term impacts and peak doses beyond 1,000 years will also be applicable to the analyses performed in the upcoming Phase 2 SEIS and long-term PPA for the WVDP and WNYNSC.

Please contact me if you have any questions or would like to discuss these issues further.

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