Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

NOV 10 2015

Mr. Harold Simon, Chairperson
Savannah River Site Citizens Advisory Board
P.O. Box A
Aiken, South Carolina 29802

Dear Mr. Simon:

SUBJECT: Citizens Advisory Board (CAB) Recommendation Number 332 – Health Effect Reporting by the Savannah River Site [SRS] (Your letter, 9/23/15)

Thank you for your recommendation on health effect reporting. The Department of Energy Savannah River Operations Office (DOE-SR) partially accepts your recommendation and provides the following responses to the recommendation:

1. *Continue to work with the Center for Disease Control (CDC)* and *Agency for Toxic Substances and Disease Registry (ATSDR) to effectively report the health and environmental effects of clean-up and related activities performed by the Savannah River Site.*

We do accept this recommendation. No additional work at SRS is anticipated from the CDC or the ATSDR, but DOE will support them, should they determine that other studies are necessary in the future.

The CDC began the SRS Dose Reconstruction Project in 1992 at the request of DOE. The CDC issued the Final Report of the SRS Dose Reconstruction Project in 2006, which indicates that the doses from SRS operations do not warrant further studies.

ATSDR is part of the U.S. Department of Health and Human Services, and is a sister agency to the CDC. The Comprehensive Environmental Response, Compensation, and Liability Act requires ATSDR to conduct a public health assessment (PHA) at all sites proposed for the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL). SRS was listed on the NPL in 1989, which triggered the ATSDR studies at SRS. At the conclusion of a PHA, if there is an urgent health threat, ATSDR can issue a public health advisory warning people of the danger. ATSDR can also authorize health education or pilot studies of health effects, full-scale epidemiology studies, disease registries, surveillance studies, or research on specific hazardous substances.

ATSDR has issued three PHA reports on SRS. Although the reports cite several recommendations and next steps, ATSDR concluded that the hazards they studied were unlikely to cause adverse health effects to the general public. ATSDR did not issue any advisories nor authorize any subsequent studies related to the SRS PHA, so at this time no additional SRS involvement from ATSDR is anticipated.

2. *Work with the CDC and ATSDR to make available copies of the ATSDR Public Health Assessment at Environmental Justice Meetings, CAB Meetings, and future outreach meetings.*

We do accept this recommendation. The PHA is not an SRS document. All ATSDR reports are available in their entirety on their webpage. Additionally, ATSDR is happy to provide either a disk or hard copies of any of their reports to any interested parties.

Information on how to access or request copies has been made available to the CAB in the past and is provided below. However, DOE will request several disk copies of each of the reports in the PHA to have on hand at CAB Full Board meetings in 2015 and 2016.

There is a document request form on the ATSDR website, http://www.atsdr.cdc.gov/. Additionally, documents may be requested by phone at (800) CDC-INFO/(800) 232-4636.

3. *Take into consideration the next step recommendations by the ATSDR and implement those recommendations as best as possible.*

We do accept this recommendation. All recommendations made by outside agencies to DOE are evaluated to balance the benefits and cost impacts of implementation. The three studies making up the PHA have resulted in a total of 12 recommendations. The results of DOE's consideration of ATSDR's recommendations are summarized below.

Recommendations from the *Evaluation of Off-Site Groundwater and Surface Water Contamination at the Savannah River Site (USDOE) - 2007*

ATSDR Recommendation #1. DOE should continue to monitor the "boundary wells" in the A/M-Area volatile organic compounds (VOCs) until monitoring results demonstrate that groundwater plume remedial activities are successful and site-related contaminants no longer have the potential to impact off-site wells.

DOE Response – Fully Implemented - SRS continues to closely monitor VOCs in the groundwater in the A/M-Area.

ATSDR Recommendation #2. The South Carolina Department of Health and Environmental Control (SCDHEC) and DOE should use adequate detection limits for the analysis of all environmental monitoring data. Detection limits above the contaminant-specific screening levels do not allow for adequate public health evaluations since there is no way to quantitatively determine whether the concentrations are at levels of health concern.

DOE Response – Fully Implemented - SRS uses the drinking water screening levels established by EPA for the analysis of groundwater monitoring data. Additionally, SRS developed and implemented minimum detectable concentrations for environmental radiological analyses.

ATSDR Recommendation #3. DOE, the Georgia Department of Natural Resources (GDNR), and SCDHEC should continue to monitor potential contaminant concentrations in the Savannah River at or near the mouth of the streams that flow through or originate at SRS. The types and frequencies of activities by the general public in the Savannah River near these locations should also be monitored periodically to assure that exposures to off-site populations are kept well below the levels that could cause adverse health effects. Several agencies have used concentrations in the river at or below Highway 301 for their calculation of potential off-site exposure dose; however, concentrations can be greater at the mouths of the SRS streams, which are unrestricted to the public. ATSDR recommends that the concentrations at or near the mouths of the streams be considered when estimating potential off-site exposures.

DOE Response – Fully Implemented - SRS continues to monitor streams that flow through the Site, the Savannah River, and the Site's groundwater. Upon consideration of the ATSDR's recommendation, river and stream monitoring was not revised as recommended in the report because the protocols for measuring tritium concentrations at Highway 301 are consistent with those used by GDNR, SCDHEC, and the downstream water treatment facilities – Beaufort-Jasper Water and Sewer Authority, and the City of Savannah Domestic and Industrial System. Maintaining consistent protocols with other agencies allows standardization for data comparison. The potential transport of other radionuclides offsite is measured in the onsite streams at points uninfluenced by any other contributories. This sampling protocol results are more conservative than measurements near or at the mouth of the streams. The data from these onsite stream sample locations are used in the dose calculation for potential off-site exposure.

Recommendations from the *Evaluation of Exposures to Contaminants in Biota Originating from the Savannah River Site - 2012*

ATSDR Recommendation #1. DOE should continue to monitor all types of biota consumed by humans both on and off the Site until all remediation actions are completed and no old or new sources of contamination remain.

DOE Response – Fully Implemented - SRS has continued to monitor biota consumed by humans.

ATSDR Recommendation #2. DOE should be kept informed of the types of biota consumed by humans and provide adequate monitoring for those types that may be contaminated by Site activities. There were limited or no data reviewed on some animals potentially consumed by humans, such as alligators, rabbits, squirrel, ducks, turtles, and other small animals.

DOE Response – Partially Implemented – The Savannah River Ecology Laboratory (SREL) performed a study to document the levels of radiocesium, mercury, and a suite of metals in the tissues of gray squirrels and wood ducks, and mercury and metals in feral hogs from various regions on the SRS. The final report is expected by the end of 2015.

ATSDR Recommendation #3. DOE should periodically review potential differences in environmental monitoring results between all agencies and programs involved. This comparison should include the on-site field surveys performed on harvested animals and laboratory sampling results.

DOE Response – Fully Implemented - Since 1991, SRS has participated in a regional forum to review, evaluate, and compare analytical methods, analytical data, sampling protocols, and data reporting. The Site also participates in the Mixed Analyte Performance Evaluation Program that evaluates laboratory performance against prepared standards.

ATSDR Recommendation #4. Largemouth bass and bowfin have typically accumulated the highest concentrations of mercury. Currently, the State of South Carolina recommends not eating these two species if collected from portions of the Savannah River between Highway 119 in Jasper County to U.S. Highway 17 near Savannah, Georgia.

DOE Response - No SRS action was warranted for this recommendation, but the SCDHEC fish advisory remains in effect.

ATSDR Recommendation #5. DOE should consider routine environmental sampling of turtles for aquatic contaminants, especially for those chemical and radioactive contaminants found predominantly in pond and stream sediment.

DOE Response – Partially Implemented - SREL performed a study of reptiles as long-lived bioaccumulators of contaminants and potential exposure risk to local residents through consumption. The final report is expected by the end of the calendar year.

Although not a recommendation or next step, the report noted "the contribution of mercury from SRS-related activities to the river system is not known." SRS committed to update the Savannah River National Laboratory report, *Assessment of Mercury in the Savannah River Site Environment*, to address this concern. The report is scheduled to be issued by the end of the year.

Recommendations from the *Evaluation of Offsite Air Contamination From the Savannah River Site – 2014*

ATSDR Recommendation #1. ATSDR recommends that DOE-SR conduct air modeling for trichloroethylene based on actual emissions between 1997 and 2010. ATSDR recommends that this modeling include both short and long-term averaging times.

DOE Response – Fully Implemented - This study has been completed, and the report is in the final review cycle. SRS will transmit the final study to ATSDR upon the release of the report.

ATSDR Recommendation #2. ATSDR recommends that DOE-SR conduct air dispersion modeling for all carcinogenic South Carolina Standard No. 8 pollutants based on the actual emissions between 2004 and 2010.

DOE Response – Fully Implemented - This study has been completed, and the report, *Evaluation of Offsite Air Contamination From the Savannah River Site*, is in the final review cycle. SRS will transmit the final study to ATSDR upon the release of the report.

ATSDR Recommendation #3. ATSDR recommends that DOE-SR consider ambient air sampling at the Site boundary for South Carolina Standard No. 8 air pollutants to better understand the relationship between the modeled and actual concentrations of these pollutants

DOE Response – Fully Implemented - The report, *Evaluation of Offsite Air Contamination From the Savannah River Site*, will address SRS emissions modeling and next step actions.

ATSDR Recommendation #4. ATSDR recommends that DOE-SR continue to monitor for airborne radioactive materials and model releases of criteria pollutants as long as release sources continue to be present at the SRS.

DOE Response – Fully Implemented - SRS continues to monitor for airborne radioactive materials and model releases of criteria pollutants.

4. *Work with the CDC and ATSDR to condense the findings of the Public Health Assessment and make it readable for the general public, and, when available and feasible, extend an invitation to the ATSDR to attend a CAB meeting and provide an overview of the Public Health Assessment.*

We partially accept this recommendation. The PHA is not an SRS document and is written in the format established by the ATSDR. It is inappropriate for SRS to rewrite or make technical interpretations of another agency's work product.

In response to CAB Recommendation #332, DOE contacted ATSDR to make another request for a presentation. ATSDR responded that since PHAs for all DOE NPL sites have been completed, ATSDR no longer maintains the funds or personnel to support an SRS CAB presentation at this time.

5. *Affirms through their continued outreach activities that the health and well-being of the community and environment is of the utmost concern as clean-up activities continue at SRS.*

We do accept this recommendation. DOE-SR and its contractors remain committed to protecting the public and the environment from exposures resulting from SRS operations. SRS operates a robust environmental monitoring program designed to identify, quantify and evaluate any risk to the public and environment since 1954. The results are summarized in the Annual Site Environmental Report (ASER), which demonstrates SRS's compliance with federal and state regulations, and DOE requirements.

The 2014 report became available October 1, 2015, on the world wide web at http://www.srs.gov/general/pubs/ERsum/er14/index.html. Previous years' SRS ASERs are available at http://www.srs.gov/general/pubs/ERsum/er/index.html.

If you have any questions, you may contact me or Mr. Michael Mikolanis, of my staff, at (803) 952-8187.

Sincerely,

Jack R. Craig
Savannah River Site Manager

AMIES-16-001

cc:
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