



Many Voices Working for the Community

Oak Ridge Site Specific Advisory Board

Monthly Meeting of the Oak Ridge Site Specific Advisory Board

APPROVED February 12, 2020 Meeting Minutes

The Oak Ridge Site Specific Advisory Board (ORSSAB) held its monthly meeting on Wednesday, February 12, 2020, at the DOE Information Center, 1 Science.gov Way, Oak Ridge, TN, beginning at 6 p.m. Copies of referenced meeting materials are attached to these minutes. A video of the presentation portion of the meeting was made and is available on the board's YouTube site at www.youtube.com/user/ORSSAB/videos.

Members Present

Leon Baker
Andrea Browning
Richard Burroughs
Bill Clark
Amy Jones
Noah Keebler

Shell Lohmann, Chair
Harriett McCurdy
Georgette Samaras
Leon Shields, Vice Chair
Bonnie Shoemaker,
Secretary

Fred Swindler
John Tapp
Rudy Weigel
Robert Whitaker

Members Absent

Marite Perez

Brooke Pitchers

Dennis Wilson¹

¹Third consecutive absence

Liaisons, Deputy Designated Federal Officer, and Alternates Present

Dave Adler, ORSSAB Deputy Designated Federal Officer (DDFO), DOE-OREM

Melyssa Noe, ORSSAB Alternate DDFO, OREM

Kristof Czartoryski, Tennessee Department of Environment and Conservation (TDEC)

Connie Jones, U.S. Environmental Protection Agency (EPA)

Others Present

Jim Bolon, Isotek Systems, LLC

Shelley Kimel, ORSSAB Support Office

Sara McManamy-Johnson, ORSSAB Support Office

Nathan Felosi, OREM

Steven Clemons, OREM

Craig VanTrees, EPA

Cathy Amoroso, EPA

Roger Petrie, UCOR

Nine members of the public were present.

Liaison Comments

Mr. Adler – Mr. Adler reminded attendees that the public opening for the K-25 History center is scheduled for Feb. 27. He added that work would begin on tearing down significant components of the centrifuge at the East Tennessee Technology Park (ETTP).

Mr. Czartoryski – None.

Ms. Connie Jones – Ms. Jones told members that EPA has a new management chain within EPA, the Superfund and Emergency Management Division, directed by Carol Monell. She said the new Branch Chief is Glen Adams, who used to be over the Superfund Support Section. Ms. Jones said her new immediate supervisor is Section Chief Cathy Amaroso, and she also introduced new Remedial Project Manager Caig VanTrees. Ms. Jones also added that she toured ETTP earlier that day and she commented on the significant changes at the site.

Presentation

Mr. Shields introduced Jim Bolon, president of Isotek Systems, LLC, and presenter for the evening's topic on Processing U-233 Materials.

Mr. Bolon gave members an overview of Isotek System LLC and their task of securing, processing, and dispositioning uranium-233 (U-233) inventory stored at Building 3019, including highlights of the U-233 project chronology from when DOE first awarded the contract to Isotek in October 2003.

He next discussed the varieties of materials identified for disposition and what types of processing are required to disposition each type, as well materials that may be reused. Additionally, he discussed the facilities where Isotek is located and gave overviews of each building's history.

Mr. Bolon then told members about the public-private partnership between DOE, Isotek, and TerraPower, in which rare thorium isotopes are recovered during the U-233 process and then used in cancer research, and he showed a video that provided an overview of the extraction process (see attached materials). The thorium would then be used to generate actinium-225, a necessary component for targeted alpha therapy. He next showed a video that provided an overview of targeted alpha therapy (see attached materials).

He told members that Isotek began glovebox operations in October and has completed processing six cans of material – extracting nearly a quarter of a gram of thorium – and he gave a more detailed overview of the process.

Next, he discussed Isotek's preparations for hot cell processing, which is the processing of the more highly radioactive materials and extraction of thorium.

Mr. Bolon added that Isotek tries to utilize local business suppliers as much as possible to try to keep money in the local community, and he listed the various suppliers, the components or services they provide, and their location.

After the presentation, board members asked the following questions:

- Mr. Tapp asked for clarification on the number of doses ORNL generates, how long it takes to use the doses, and whether there is another source.
 - Mr. Bolon said ORNL can generate about 4,000-5,500 doses of actinium per year, but they only have a quarter of a gram of thorium. He said Isotek will ultimately deliver more than 40 grams of thorium to TerraPower, so they will ultimately be able to use that make more than half a million doses of actinium for targeted alpha treatment.

- Mr. Bolon said work is underway to develop an accelerator to generate thorium, so this project would serve as a supplement to that.
- Mr. Baker asked how long the extraction process of thorium to actinium takes.
 - Mr. Bolon said Isotek's extraction portion – extracting the thorium from the uranium – takes days, and he thinks the TerraPower portion of the process – extracting the actinium from the thorium – takes a similar amount of time.
 - Mr. Baker asked what the average exposure to workers is.
 - Mr. Bolon said it's not zero, but it's in the singular millirem range, and he described the protection measures in place.
 - Ms. Browning asked for clarification on the number of types of cancers being targeted with this treatment option.
 - Mr. Bolon said there's a number of different types.
 - Mr. Adler commented on the importance of this effort to the EM program. He said Building 3019 needs to be de-inventoried to begin cleanup in adjacent areas. Additionally, he said removing the material will allow ORNL to reduce its security posture. He then asked Mr. Bolon how long until Building 3019 is cleaned out, based on current projections.
 - Mr. Bolon said possibly third or fourth calendar quarter of 2025.
 - Mr. Weigel asked how much longer Isotek will be able to continue to accept the Molten Salt Reactor Experiment (MSRE) traps if they continue to be accepted past the 2025 time frame.
 - Mr. Adler said he was sure there would be a plan in place before that. OREM's Nathan Felosi said there are plans in place for improvements to MSRE so ideally traps will not be necessary.
 - Ms. McCurdy asked where the employees are hired from.
 - Mr. Bolon said many employees are hired from competitors, from DOE environments, or from commercial nuclear, and some are trained in-house using a program that meets DOE requirements.
 - Mr. Clark asked if thorium is a naturally occurring element.
 - Mr. Bolon said there are some naturally occurring isotopes, but this particular isotope is man-made.
 - Mr. Weigel asked what the comparison is between Isotek's dosages received versus allowable standards within the DOE concept.
 - Mr. Bolon said Isotek set an administrative control limit of 500 millirems per worker per year. He said the federal guidelines allow 5,000 millirems per worker 2-3.

Questions from the Public

- Roger Macklin said he had corresponded several years ago with Dr. Barry Allen, an expert in medical physics, and at Mr. Macklin's request, Dr. Allen sent a letter to DOE's Brian Démonia that request DOE investigate capturing thorium from the uranium onsite. Mr. Macklin asked to submit a copy of that letter into the record (see attachment), and he commended DOE and Isotek for this project.
- Luther Gibson said the Defense Nuclear Safety Board (DNSB) sent a letter indicating a safety analysis of this project indicated different release value was being used from that of the DOE handbook. Did Isotek receive that letter and address that?
 - Mr. Bolon said that letter was received and addressed. He said DOE agreed with the approach Isotek has taken. He said the DNSB has taken an extraordinarily conservative view, but what Isotek has presented still maintains the safety envelope of the facility and keeps the workers safe.
- Bob Hatcher asked how the decision was made to work on a glovebox scale versus scaling up to process more quickly.
 - Mr. Bolon said increasing the scale brings more materials into the facility and it brings along with it two major challenges: 1) increased materials would require increased security posture, which would increase cost and effort; 2) it would require the design and construction of systems to accommodate those materials, and that would increase the cost and timeline. He said in the hot cells, they will only bring over one can of material at a time. He said it's to keep safety and security risks to a minimum.

Public Comment

- Luther Gibson commented about the announcement of the draft Request for Proposal (RFP) for the Oak Ridge Reservation. He next he suggested a half-day workshop to discuss the ETTP groundwater feasibility study. He said it is one of the decreasing number of remaining opportunities to look at what long-term stewardship will look like at ETTP. He next discussed the recently released Presidential budget and what it means for ETTP.
 - Mr. Adler said regarding the RFP, there are plans in place to ensure the work will continue in an uninterrupted fashion. Regarding groundwater feasibility study, he said DOE will make sure there are plenty of opportunities for people to understand the feasibility study. Lastly, regarding the Presidential budget, Mr. Adler said the numbers released are similar to those of previous years.

Board Business/Motions

1. Ms. Lohmann asked for a motion to approve the meeting agenda.
 - a. **2/12/20.1 Motion to approve the agenda**
Motion made by Mr. Shields and seconded by Mr. Swindler. Motion passed unanimously.
2. Ms. Shoemaker presented the November 13, 2019 meeting minutes and asked for a motion to approve.
 - a. **2/12/20.2 Motion to approve November 13, 2019 meeting minutes**

Motion made Tapp and seconded Jones. Motion passed unanimously.

Responses to Recommendations & Alternate DDFO Report

Ms. Noe said OREM's Dennis Mayton will attend the next EM & Stewardship meeting to discuss groundwater. She added the draft membership package is at headquarters for review. She also said there will be another tour of the K-25 History Center set up for board members for March as part of the board's discussion of historic preservation.

Committee Reports

Executive – Ms. Lohmann said executives discussed the upcoming Spring Chairs Meeting in Las Vegas. She said there was also discussion about the 2020 Annual Planning Meeting

EM & Stewardship – Ms. Jones said the last meeting, held in October, contained extensive discussion on the ETTP groundwater feasibility study. She added that the committee had discussed, moving forward, issue groups meeting before EM & S meetings to discuss any questions or recommendations they may have. She said the U-233 issue group will meet 15 minutes before the next EMS meeting.

Additions to the Agenda & Open Discussion

- Mr. Tapp asked about the K-25 History Center and whether there was any overlap with Oak Ridge's legacy parks system.
 - Ms. Noe said there may be some overlap, but it will focus specifically to ETTP.

Action Items

Open
None

Closed
None

The meeting adjourned at 7:10 p.m.

I certify that these minutes are an accurate account of the February 12, 2020, meeting of the Oak Ridge Site Specific Advisory Board.



Michelle Lohmann, Chair



Bonnie Shoemaker, Secretary

May 12, 2021

Oak Ridge Site Specific Advisory Board

ML/sm

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December 19, 2006

Mr Brian DeMonia
USDOE Oak Ridge Office
PO Box 2001, Oak Ridge Tn 37831

Re: U-233 stabilisation program

Dear Sir

I was pleased to learn that the original intent in this program was to extract Th-229 during the U-233 processing, the Th-229 then being made available for cancer research and treatment.

However, it is now apparent that this action has been dropped from the program. While funds are always in short supply, dropping the Th-229 option could set back plans for the development of new and effective cancer therapies by decades. It is hard to imagine that this cost to the cancer community would be acceptable to Congress.

My research group (CERO) in Australia has published some 40 papers on alpha therapy for cancer, including two highly promising phase 1 clinical trials for melanoma. Other groups in the USA and elsewhere are conducting clinical trials for leukaemia, glioblastoma and lymphoma. We plan new trials for pancreatic and prostate cancer in the new year. The importance of alpha therapy as a new modality for the control and regression of cancer cannot be overstated. We have developed a new approach using alpha emitters for the regression of tumours by a targeted vascular alpha therapy process, which promises to have a major impact on the management of cancer.

As President of the International Organisation of Medical Physics (IOMP), I can say with some certainty that the loss of so much Th-229 can only have a deleterious effect on research into this exciting new modality for cancer therapy.

I do hope that efforts can be made to extract the Th-229. If so, then other laboratories may be able to take this material for further processing for cancer therapy.

Yours sincerely



Director CERO
President IOMP

ORSSAB Meeting

Wednesday, February 12, 2020

Question: The Defense Nuclear Facilities Safety Board website is trove of publicly available information about activities at DOE nuclear facilities. On October 7, the Board sent a letter to Secretary Perry stating that the accident analysis in the Building 2026 preliminary documented safety analysis used different release fraction values than recommended in the DOE Handbook 3010 that may not result in a conservative analysis. That could be an error carried forward to other campaigns if not addressed. And I might add this should also be considered in your Emergency Management technical basis. Do you accept the DNFSB's conclusion and has there been a response?

Comment:

It has been 225 days since the EM Consolidated Business announced and is still announcing that a draft request for proposal for the Oak Ridge Reservation Cleanup Contract will be issued within 15 to 60 days.

At the Executive Committee meeting last week I suggested that a half-day workshop be considered for ETP Main Plant Groundwater Feasibility Study. It is a very complex study and the scope that is separate from other Zone 2 decisions may be difficult to focus upon not to mention the tendency in these discussions to interject groundwater issues on and going off other parts of the reservation. A Board presentation and a committee meeting that is basically a make-up session for the Board meeting is not enough. This is also one of the decreasing number of opportunities to consider the implications of what long-term stewardship looks like at ETP. *remaining*

In the FY 2021 President's budget released Monday, Oak Ridge Defense Environmental Cleanup goes from \$450M estimated in 2020 to \$263M estimated in 2021. The Uranium Enrichment D&D Fund goes from \$196M to \$145M. We know that the Congressional appropriations process will change this, but a reasonable question to still ask is whether those levels require renegotiation of FFA milestones.