

POLICY ISSUE
INFORMATION

August 22, 2014

SECY-14-0092

FOR: The Commissioners

FROM: Brian E. Holian, Acting Director
Office of Federal and State Materials
and Environmental Management Programs

SUBJECT: STAFF EFFORTS FOR ADDRESSING DECOMMISSIONING ISSUES
AT NON-LICENSED RADIUM SITES UNAFFILIATED WITH THE
MILITARY

PURPOSE:

The purpose of this memorandum is to provide an informational update to the Commission regarding the staff's activities to ensure compliance with the U.S. Nuclear Regulatory Commission (NRC) regulations for decommissioning efforts involving historical radium contamination at non-licensed sites owned or operated by private or government entities. Staff has separately communicated to the Commission regarding radium contamination at military sites (i.e., SECY-14-0082). This paper does not address any new commitments.

SUMMARY:

With the enactment of the Energy Policy Act of 2005 (EPAAct), the U.S. Congress expanded the NRC's jurisdiction to include certain discrete sources of radium-226 as byproduct material. In 2007, the NRC revised its regulations to conform its definition of byproduct material to that set out in the EPAAct. Staff recently became aware of remediation activities occurring at two non-licensed sites with radium contamination (i.e., Great Kills Park and Waterbury Clock Company).

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This led the staff to begin gathering information about these two sites and to evaluate options for the NRC's regulatory oversight role given other Federal or State agency's involvement with the remediation. As a result of this initial work, staff identified the need to assess the present situation and began planning an information search for records to identify other similar sites with historical radium contamination. Finally, information from the staff's work on sites with radium contamination also raised jurisdictional questions about the contractors who would be involved with the remediation of Federal sites, and whether this work would be performed under the NRC or Agreement State service provider (i.e., contractor) licenses.

BACKGROUND:

The EPAct expanded the definition of byproduct material to include certain discrete sources of radium-226, other discrete sources of naturally-occurring radioactive material, and certain accelerator-produced radioactive material under NRC jurisdiction (collectively, these materials are referred to as Naturally Occurring or Accelerator-Produced Radioactive Material (NARM)).¹

Specifically, Section §651(e)(3)(A) of the EPAct (§11e.(3) of the Atomic Energy Act of 1954, as amended (AEA); 42 U.S.C. 2014(e)) amended the definition of byproduct material to include "any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after [August 8, 2005,] for use for a commercial, medical, or research activity." On November 30, 2007, the NRC implemented this provision of the EPAct by amending the definition of byproduct material in 10 CFR Parts 20, 30, 50, 72, 150, 170, and 171 to be consistent with the EPAct in the final rule "Requirements for Expanded Definition of Byproduct Material" (72 FR 55864; October 1, 2007) (NARM rule). Additionally, the NRC established a definition for the term "discrete source" to be used for the purposes of the new definition of byproduct material as this term was not specifically defined by the EPAct. Accordingly, the NRC's regulations in 10 CFR Parts 20, 30, 110, and 150 define a discrete source as "a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities." *Id.*, at 55870. The Statements of Consideration (SOC) for the NARM rule noted that "once a discrete source meets the definition of *Byproduct material*, any contamination resulting from the use of such discrete sources of this byproduct material will also be considered byproduct material." *Id.*, at 55871. However, the SOC also clarified that the NARM rule would not apply to radium under the control of the military that is being used, or available for use, for military operations.² *Id.*, at 55867.

In its examination of topics related to non-military radium, the NRC staff has remained cognizant of previous direction from the Commission on military radium sites. Existing policy for military

¹ NRC's Agreement States and certain non-Agreement States had regulatory programs for Naturally-Occurring and Accelerator-Produced Radioactive Material prior to the implementation of the Energy Policy Act of 2005.

² "The term 'military operations' covers what is traditionally understood as the military's primary mission for national defense, including warfare, combat, and battlefield missions, and, of course, training for battlefield missions." 72 FR 55864; October 1, 2007.

radium sites has been defined in SECY-08-0077, "Options for U.S. Nuclear Regulatory Commission Involvement with the Navy's Remediation of the Hunters Point Naval Shipyard Site in California," SECY-11-0023, "Jurisdiction for Military Operational Radium-226," and by the subsequent direction provided by the Commission.³ The NRC staff is seeking to better determine the similarities that exist between these new sites and the military sites for which the Commission previously provided direction. For military sites being remediated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where the U.S. Environmental Protection Agency (EPA) is actively overseeing the remediation (e.g., sites listed on the National Priorities List), the NRC staff has previously proposed taking a limited involvement approach to stay informed and rely on the EPA's oversight. The staff is using this approach for the Navy's Hunters Point Naval Shipyard and Alameda Naval Air Station sites and the Air Force's McClellan Air Force Base site. The staff is continuing its regulatory oversight of the military contractors conducting remediation activities at these sites under an NRC service provider license in areas of exclusive Federal jurisdiction. However, in Agreement States, the State would oversee the service providers' work under its State license if the private service contractor is performing work activities on property that is not subject to exclusive Federal jurisdiction.

DISCUSSION:

During Fiscal Year (FY) 2013 the staff became aware of remediation at two radium-contaminated, non-licensed, non-military sites. This led the staff to begin gathering information about these two sites and to evaluate options for the NRC's regulatory role given other Federal agency involvement in the ongoing remediation. The information the staff obtained raised questions about the existence and status of other sites with radium contamination from non-licensed historical activities. It also raised jurisdictional questions about the private service providers performing remediation services at a Federal site contaminated with radium or other licensable AEA material; specifically, whether the service provider would need an NRC or an Agreement State service provider license for its activities at the site. These three areas are discussed below in more detail. Furthermore, the NRC staff wanted to take the opportunity to highlight certain successes with remediating historic radium contamination in Pennsylvania and Connecticut.

Gathering Information on Two Newly Identified Non-Licensed Radium Sites

Staff is working with stakeholders at two non-military sites (Great Kills Park and Waterbury Clock Company) in order to gather information about the specific site situations and to evaluate options for the NRC's regulatory role at the sites given the remediation activities being conducted with EPA or other Federal agency involvement. The staff is taking a non-intrusive approach in gathering information to minimize any potential impacts to the existing remediation effort. As part of the evaluation, the staff is treating these situations similarly to that taken at

³ The NRC staff continues to work on military radium issues and recently forwarded a paper to inform the Commission on these efforts and make further recommendations for military sites (SECY-14-0082).

military radium sites, for which the Commission has already provided direction, such as SRM-SECY-08-0077.

Great Kills Park is a park unit within the Gateway National Recreation Area located on Staten Island, New York. Great Kills Park is a Federally-owned, non-military site operated by the National Park Service, a bureau of the U.S. Department of the Interior (DOI). The site is currently undergoing a time critical removal action under CERCLA to remediate radium contamination hotspots. The National Park Service, and not EPA, is the lead agency for the CERCLA action. The radium hotspots are believed to be from the past disposal of radium needles, which were in the sanitation materials used to fill in low-lying areas of the park in the 1930s. Initial staff discussions with the National Park Service were focused on information about the contamination and the plans and schedule for the ongoing time critical removal action. The removal action was on hold, but resumed in July 2014. The removal action is estimated to result in a volume of less than 24, 55-gallon drums of material. As part of this removal action, the National Park Service has adopted the NRC's 25 millirem per year decommissioning standard in 10 CFR 20.1402. Future discussions between the NRC and National Park Service staff are planned to learn about: further work; controls for unknown subsurface contamination; final status survey plans and results; and the roles of EPA and the State of New York.

The second non-licensed site that the NRC staff became aware of is the former Waterbury Clock Company, a privately-owned complex of buildings located in Waterbury, Connecticut. This site has historical contamination from radium dial painting dating from 1919 to the 1930s. The majority of this site is currently undergoing investigation and planning for cleanup under the EPA Brownfields process, which supports land revitalization efforts by funding environmental site assessment, cleanup, and job training activities. The Brownfields process is not subject to the procedural and substantive requirements of CERCLA. Other areas of the site have undergone previous investigation and some remediation by the State of Connecticut. In the 1930s, Waterbury Clock Company was placed in receivership, and it is currently not a financially viable entity. Staff has begun conversations with EPA and the State of Connecticut, a non-Agreement State, regarding their respective roles at the former Waterbury Clock Company, as well as their oversight of activities, and the planned cleanup levels at the site. Currently, multiple private entities own portions of the former Waterbury Clock Company complex. The current owner of the portion of the site in the Brownfields process, New Opportunities Inc., is a non-profit community action organization with social programs intended to eliminate poverty; it relies primarily on grant funding. This grant funding can only be used for specified purposes serving underprivileged communities. The NRC staff has been informed by New Opportunities, Inc., that EPA is currently the only viable source of funding for the investigation and cleanup of the abandoned areas of this site.

Remediation and removal activities have been ongoing and continue at both the Great Kills Park and Waterbury Clock Company sites under CERCLA or the EPA's Brownfields program. Once the NRC staff has gathered sufficient information and completed its evaluation, staff may propose regulatory approaches to be implemented at these sites for Commission consideration.

Identifying Non-Licensed Sites with Historical Radium Contamination

Information obtained from the State of Connecticut indicates the existence of at least five other historic clock factory sites in Connecticut where radium was used. The State of Connecticut provided the results from scoping surveys for these sites, which showed radium contamination in buildings at each site. Staff discussions with EPA and the State of Connecticut indicate that cleanup of these sites has not occurred nor is it planned. The NRC staff is in the process of reviewing the data provided by the State of Connecticut and will engage in further information gathering to determine whether access controls or additional NRC involvement may be necessary at these facilities. While the staff continues to collect information about these five other Connecticut sites, the staff has initiated a search for other similar historical sites (e.g., watch or clock factories or other manufacturing, maintenance, or repair facilities) that involved radium dials or gauges.

Staff has sought assistance with its search to identify other such sites from the Oak Ridge National Laboratory (ORNL), which previously identified and researched historically contaminated sites for the NRC in the 1990s. The scope of ORNL's effort, in this instance, will include identifying, describing, and prioritizing historic radium sites. It is expected that most of the sites to be identified will have never been licensed by the NRC. A complicating factor in the remediation of these sites is that many locations were associated with commercial enterprises that are defunct and that there may be limited resources for cleanup.

ORNL has formulated a preliminary plan to identify historic radium sites based on: existing literature and databases; historical knowledge of sites that may have used this material (archival research); existing U.S. Department of Energy flyovers; and information provided by States.

For each site that is identified, ORNL is beginning to search for the following information:

- The amount/extent of radium contamination at these sites (including historical information and/or informed assumptions about the radium facilities' structures/areas, processes, and activities).
- Location and population near the sites.
- Current State/Federal involvement.
- Current access, activities, and uses at the site (including existing controls, such as signs, fences, and restrictions on use).

Although ORNL's final assessment of these sites is not scheduled to be complete until the end of FY 2015, ORNL has been instructed to notify the NRC immediately if, during its investigation, it encounters information that suggests a site poses an immediate public health or safety concern. Ultimately, the NRC staff intends to develop a prioritization scheme to allow the NRC to focus on the highest priority sites. The staff has limited the ORNL scope to searching for sites in non-Agreement States because Agreement States are responsible for such sites in their States.

While the remediation of radium contaminated sites poses a challenge, successful resolutions have been obtained by both NRC and Agreement States. The Commonwealth of Pennsylvania (PA), an NRC Agreement State, has been working with the EPA at the Safety Light Corporation and Strube Incorporated sites, both of which have radium contamination. Despite financial hardship, PA has worked with their licensee to enable Strube Incorporated to complete the cleanup of all but one warehouse. In the case of the Safety Light Corporation site, the U.S. Army Corps of Engineers, PA, and the EPA have been working together to remove and dispose of waste at the site. Shortly after NRC's authority for radium was enacted, NRC staff held an inspection at the New England Air Museum (NEAM) along with the State of Connecticut. It was determined that NEAM possessed many radium devices, some of which were leaking. This eventually led to the State of Connecticut choosing to add a warehouse and contaminated materials to the State's NRC license for cleanup, to minimize the impact to the museum's operations. Given these successful resolutions, NRC staff will continue to interact on existing State efforts and intends to share its approach and lessons learned with its Agreement State partners through the Organization of Agreement States.

Staff is in the early stages of this historical radium site search effort, and is considering appropriate action similar to that taken at military radium sites, for which the Commission has already provided direction. NRC staff intends to have the following available by the end of calendar year 2015: a listing of radium facilities found; associated background information for these facilities; and a prioritization scheme for addressing these facilities.

Addressing Issues Related to Service Provider Jurisdictional Determinations

Service provider activities involving AEA materials conducted on Federal facilities in Non-Agreement States are under NRC's purview. For service provider activities involving AEA materials conducted on Federal facilities within an Agreement State, the service provider jurisdiction is dependent upon the site's land jurisdiction (e.g., exclusive Federal, concurrent, etc.) and health and safety jurisdictions.

Recently, staff has received jurisdictional determination requests to clarify whether service providers working at Great Kills Park and Hunters Point Naval Shipyard are subject to the regulatory jurisdiction of the NRC or the Agreement States. Both of these sites are Federal facilities located within Agreement States. In order to help clarify this issue, staff created a supplement to FSME Procedure SA-500, "Jurisdictional Determinations," to provide additional specific guidance. Additionally, staff shared its jurisdictional determinations with the National Park Service and the State of New York for Great Kills Park and with the U.S. Department of the Navy and the State of California for Hunters Point Naval Shipyard, as well as the affected service providers.

Based on the jurisdictional determinations provided by DOI's Office of the Solicitor on behalf of the National Park Service, the NRC staff recently determined that a service provider working at Great Kills Park will be under the State of New York's Agreement State jurisdiction. A series of letters discussing the staff's determination of the service provider jurisdiction was sent to the State of New York, the National Park Service, and the service provider performing the work.

Staff also determined that service providers are under the jurisdiction of both the NRC and the State of California at the Navy's Hunters Point Naval Shipyard site because different portions of the site are subject to different degrees of Federal jurisdiction. Given the split jurisdiction over service providers, both the NRC and the State of California will work cooperatively to implement our respective oversight responsibilities in a clear manner for the Navy and its service providers at this site.

As previously discussed, staff has developed supplemental guidance to its existing FSME procedure to assist in the resolution of jurisdictional issues over private service providers operating on Federally-owned property that may arise between the NRC and Agreement States. Staff has released this guidance to the Agreement States, and will update the procedure, as necessary, in the future. A recent Agreement States letter (FSME-14-039), which provides clarification on this issue, is provided in the Enclosure.

RESOURCES:

Resources are included in the FY 2014 Enacted budget and the FY 2015 request under the Decommissioning and Low-Level Waste business line for the project management, inspection and performance assessment activities for Great Kills Park, Waterbury Clock Company, and the historical radium site identification effort. The FY 2014 Enacted budget includes \$150K and 0.7 FTE, and the FY 2015 request includes 0.8 FTE. Future resource needs will be addressed through the Planning, Budgeting, and Performance Management process.

CONCLUSIONS:

The staff is engaged in gathering information to help inform the NRC's approach at non-licensed sites containing historical radium contamination with EPA or other Federal agency involvement; has initiated an effort to identify additional sites with historical radium contamination; and is addressing issues related to service provider jurisdictional determinations. To address this new area of work, staff has been working cooperatively with other Federal agencies and States to become well informed and, as policy issues arise, the staff will seek Commission direction on a path forward. The staff recommends that this paper be withheld from public release due to the pre-decisional nature of the topics discussed, as well as the need for further comprehensive stakeholder outreach.

The Commissioners

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COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper and determined there is no financial impact.

Brian E. Holian, Acting Director
Office of Federal and State Materials
and Environmental Management Programs

Enclosure:
All Agreement States
Letter- FSME-14-039

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The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper and determined there is no financial impact.

/RA/

Brian E. Holian, Acting Director
Office of Federal and State Materials
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Enclosure:
All Agreement States
Letter- FSME-14-039

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| DATE | 5/13/14 | 6/13/14 | 6/30/14 | 7/2/14 | 8/22/14 | |

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Enclosure