



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

October 6, 2016

Current Owner
J & D Capital LLC
PO Box 2273
Waterbury, CT 067220

**SUBJECT: WATERBURY CLOCK COMPANY-5 – REQUEST FOR INITIAL SITE VISIT
AND TO PERFORM RADIOLOGICAL SURVEYS**

Dear Current Owner:

I am writing to inform you that our records indicate that your property at 205 Cherry Street Waterbury, Connecticut, is a site where radium-226 was previously used in the manufacturing of watches for the Waterbury Clock Company and the Benrus Clock Company. If you are not the current owner of the property, please let us know whom we should contact. Radium-226 is a radioactive isotope that, in certain quantities, may pose a risk to public health and safety. Radium-226 is regulated by the U.S. Nuclear Regulatory Commission (NRC). We do not know whether there is a current radiological issue at your property, and it is important that you contact us at your earliest convenience. We are requesting access to your property to perform radiological surveys and to collect samples to determine whether there is any residual contamination resulting from this historical manufacturing on your property. This testing will not damage your property and these tests will be conducted at no cost to you. If residual contamination at your property has already been remediated, please provide us with records describing cleanup activities and the status of the remediation.

To successfully complete our tests, we need to schedule two separate visits to your property: an initial visit and a scoping survey. The initial site visit will serve two purposes: 1) to determine whether there is any readily detectable radium contamination; and 2) to allow us to start planning a scoping survey. The scoping survey will involve a more detailed radiological survey to determine if there is any residual contamination. After each visit, we will share results with you as soon as they are available.

These tests will determine whether your site requires remediation to remove residual contamination. Should remediation be required, we will provide additional information on any actions that may be necessary to ensure protection of public health and safety. Please be aware that under the NRC's regulations, site owners are responsible for the costs associated with these remediation activities; as a regulatory agency, the NRC cannot provide funding. This does not, however, preclude site owners from using alternative legal options that may be available under State or Federal law to fund remediation activities. We recognize that you may not be aware of historical radium manufacturing at your site and we will continue to work with you to address and resolve this matter.

The enclosed Site Summary Report provides all of the information that the NRC has concerning historical radium storage at your property, which we found through a search of publicly available information. The enclosed Background provides more detail on the history of radium use and its potential health effects. The enclosed brochure provides an overview of the NRC.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

We would like to work with you to schedule our initial site visit and answer any questions you might have. At your earliest convenience, please contact Mr. Matthew Meyer, Acting Branch Chief, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Materials Safety and Safeguards, at (301) 415-6198, or Mr. Richard Chang, Project Manager, at (301) 415-5536.

Sincerely,



John R. Tappert, Director
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 3038962

Enclosures:

1. Site Summary Report
2. Radium Backgrounder
3. U.S. Nuclear Regulatory Commission *Overview*

REGISTERED LETTER – RETURN RECEIPT REQUESTED

Waterbury Clock Company: Site Summary

The following information was extracted from public records and the “CT File.PDF” (CT-DEP, 2009).

Addresses

0 Cherry Avenue (Building #7) (vacant)
13 Cherry Avenue (Buildings A, B, C, D, F, and M) (Enterprise Apartments)
39 Cherry Avenue (Building G) (formerly Belco; vacant and currently owned
by New Opportunities of Waterbury Inc., NOW)
177 Cherry Street (Buildings K and L) (vacant)
205 Cherry Street (Building O) (Ville Swiss Automatics)
215 Cherry Street (Buildings R and T) (vacant)
232 N. Elm Street (Buildings I and J) (NOW)
Waterbury, CT

Site Description/History

Waterbury first began as a department of Benedict and Burnham Manufacturing Company, which manufactured brass. Benedict and Burnham began manufacturing brass clocks in 1850. In 1857, the Waterbury Clock Company was formed from the original Benedict and Burnham department. By 1873, the company needed its own plant and moved to a building at the corner of Cherry Avenue and N. Elm Street (Building A in Figure 1) (U.S. Department of the Interior, 1982).

Between 1873 and 1910, Waterbury added multiple five-story buildings in the same area. As the company consumed its available land, it became necessary to add a 6th floor to many of the buildings. In 1919, radium dial painting was started at the Waterbury Clock Company. Until 1944, the entire industrial complex, on the corner of Cherry Avenue and Cherry Street in Waterbury, CT, was utilized by the former Waterbury Clock Company to manufacture time pieces painted with ²²⁶Ra.

In 1944, the name of the company was changed to the U.S. Time Corporation. Several months later, manufacturing was relocated to plants in Middlebury, CT; Little Rock, AR; and Dundee, Scotland. Benrus Clock Company purchased the complete plant in late 1944, and in 1949, the plant was subdivided into parcels and subsequently acquired by small manufacturing firms or individuals for use as storage or light industrial use (U.S. Department of the Interior, 1982).

This site summary is organized around the different parcels of the original facility. For a detailed map of the parcels and the individual buildings, see Figure 1.

0 Cherry Avenue (Building #7) (vacant)

This facility was built in 1893. The property was initially a residence and office for the Waterbury Clock Company from 1893 until 1921. The one-story annex on the east side was

built after 1893 to expand the office and create laboratory space (U.S. Department of the Interior, 1982). It is unclear if there is radium contamination in this building.

13 Cherry Avenue (Buildings A, B, C, D, F, and M) (Enterprise Apartments)

The original building (Building A) for the Waterbury Clock Company was built in 1850. The other buildings were added from 1887-1900 as the company expanded. Building A formed the nucleus of what was to become an extensive, contiguous complex of mill buildings bounded by Cherry Street, Cherry Avenue and North Elm Street. Functionally, this entire complex (Buildings A, B, C, and M) evolved as the Movement Shop where internal clock components were cast or rolled, punched, machined, finished and assembled. Building D housed the foundry and blacksmith shop; building D-1 was the boiler house (U.S. Department of the Interior, 1982). Building D-1 has been demolished and most likely did not contain radium based on its use as a boiler house. Therefore, building D-1 will not be discussed in this site summary. Radium contamination is confirmed in the other buildings by the ATSDR 1999 Public Health Assessment (PHA) [see the section in this summary titled *1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)*].

Radium cleanup was initiated in 2004 by the State of Connecticut. The State of Connecticut has indicated that remediation of these apartments is complete (CT-DEP, 2004); however, NRC staff will confirm this in further discussions with the State of Connecticut.

39 Cherry Avenue (Buildings G) (formerly Belco, currently vacant and owned by NOW)

Building G was built in 1894 and used by the Waterbury Clock factory for machining, finishing, packing, and shipping. Buildings P and Q (also referred to as the “Garage”, located at the northeastern end of Building G) were constructed in 1904 and historically used as an engine room, boiler room, and pump house (Haley and Aldrich, 2013). Buildings P and Q have been demolished and most likely did not contain radium based on their uses. Therefore, buildings P and Q are not included in this site summary. Radium contamination is confirmed in building G by the ATSDR 1999 Public Health Assessment (PHA) [see the section in this summary titled *1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)*].

177 Cherry Street (Buildings K and L) (vacant)

Prior to approximately 1900, 177 Cherry Street was occupied by several residences. The existing masonry structures were constructed in 1900, and until approximately the 1940s/50s, the subject site was used by the Waterbury Clock factory for shipping and storage as well as operations including gears, modeling, machinery, watch repair, and clock repair (Haley and Aldrich, 2013). It is unclear if there is radium contamination in these buildings.

205 Cherry Street (Building O) (Ville Swiss Automatics)

This building was built in 1903 (U.S. Department of the Interior, 1982). It is unknown what activities were conducted by the Waterbury Clock Company in this building. Radium contamination is confirmed in this building by the ATSDR 1999 Public Health Assessment (PHA)

[see the section in this summary titled *1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)*].

215 Cherry Street (Buildings R and T) (vacant)

Prior to about 1900, 215 Cherry Street was occupied by several residences. Building R was built in 1904, while building T was built in 1910. From this time through 1944 the buildings were used by the Waterbury Clock factory (Haley and Aldrich, 2013). Radium contamination is confirmed in these buildings by the ATSDR 1999 Public Health Assessment (PHA) [see the section in this summary titled *1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)*].

232 N. Elm Street (Buildings I and J) (NOW)

It is unknown when buildings I and J were built. Due to the interior design of Building J, it is suspected that the Waterbury Clock Company used it as a machine shop (U.S. Department of the Interior, 1982). Radium contamination is confirmed in these buildings by the ATSDR 1999 Public Health Assessment (PHA) [see the section in this summary titled *1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)*].

By 1917, approximately 3000 people worked at the Waterbury factory (newoppinc.org, 2012). The last watchmaker moved out in 1948, and the buildings were later used to make lingerie, neckties and belts. Currently, uses of the complex include residential apartments, industrial manufacturing, storage, and office activities.

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)

The following is a high level summary of activities that have taken place at the former Waterbury Clock Company to address radium and other contamination.

In 1998, the US EPA contacted the Agency for Toxic Substances and Disease Registry (ATSDR) to assist in conducting a public health assessment of structures that once housed clock factories in four Connecticut municipalities. The purpose of the health assessment was to evaluate the radiological survey data previously collected by the Connecticut Department of Environmental Protection (CT-DEP) at structures that once housed clock factories and to determine whether a public health hazard exists at any of these sites from the radiological contamination. The CT DEP requested assistance from the US Department of Energy (DOE) in conducting radiological surveys of the structures that once housed clock factories and the surveys were completed in April of 1998 (ATSDR, 1999).

The ATSDR (1999) Public Health Assessment (PHA) concluded that radiological contamination was detected at levels that may pose a public health hazard to occupants of the former Waterbury Clock Company buildings; however, ATSDR stated that none of the radiation levels detected pose an

immediate health problem. The Connecticut Department of Public Health recommended that individuals be disassociated from areas with radiation at levels exceeding 15 mrem/year.

Radiological survey results (measured in April 1998) reported in the ATSDR PHA (1999) for the former Waterbury Clock Company buildings are in the following tables. It is unclear if the vacant buildings were tested during the survey or if they have radium contamination.

1998 Radiological Survey Results for the former Waterbury Clock Buildings (ATSDR PHA, 1999)

0 Cherry Avenue (Building #7) (vacant)

It is unclear if there is radium contamination in this vacant building. This building is not mentioned in the ATSDR PHA (1999). It is included in this summary for completeness.

13 Cherry Avenue (Buildings A, B, C, D, F, and M) (Enterprise Apartments)

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Enterprise Apartments

Radiological Parameters (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	1st floor	Direct contact	0	10	15
		Measured at Waist level	0		
	2nd floor	Direct contact	0		
		Measured at Waist level	0		
	3rd floor	Direct contact	0		
		Measured at Waist level	0		
	4th floor Apt 417	Direct contact	240		
		Measured at Waist level	15		
	5th floor Apt 505	Direct contact	30	7	
		Measured at Waist level	12		
	5th floor Apt 507	Direct contact	90	10	
		Measured at Waist level	30		
	5th floor Apt 508	Direct contact	28	8	
		Measured at Waist level	12		
	5th floor Apt 512	Direct contact	30	7	
		Measured at Waist level	15		
	5th floor Apt 513	Direct contact	45	8	
		Measured at Waist level	15		
	5th floor Apt 514	Direct contact	100	10	
		Measured at Waist level	30		
	5th floor Apt 515	Direct contact	110	8	
		Measured at Waist level	20		
	5th floor Apt 516	Direct contact	25	12	
		Measured at Waist level	15		
	5th floor Apt 517	Direct contact	120	10	
		Measured at Waist level	18		
	5th floor Apt 520	Direct contact	30	10	
		Measured at Waist level	15		
	5th floor Apt 525	Direct contact	70	8	
		Measured at Waist level	12		
	5th floor Hall	Direct contact	800	8	
		Measured at Waist level	80		
Radon-222 (pCi/L)	4th floor	Not applicable	1.5	NR	4

39 Cherry Avenue (Buildings G) (formerly Belco, currently vacant and owned by NOW)

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Belco 2nd floor

Radiological Parameter (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	Cutting Room	Direct contact	55	10	15
		Measured at Waist level	55		
	Machine Room	Direct contact	140		
		Measured at Waist level	140		
Alpha activity(dpm/100 cm ²)	Cutting Room	Measurement of Loose Material (Smear)	<MDA	NR	20
	Machine Room	Measurement of Loose Material (Smear)	150	NR	
Beta Gamma activity(dpm/100 cm ²)	Cutting Room	Measurement of Loose Material (Smear)	<MDA	NR	20
	Machine Room	Measurement of Loose Material (Smear)	232	NR	

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Belco 3rd floor Highest radiation level detected

Radiological Parameter (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	Hallway	Direct contact	5,000	10	15
		Measured at Waist level	1,500		
	Store room	Direct contact	3,200		
		Measured at Waist level	250		
	Liba room	Direct contact	300		
		Measured at Waist level	52		
Alpha activity (dpm/100 cm ²)	Hallway	Measurement of Loose Material (Smear)	7,985	NR	20
	Store room	Measurement of Loose Material (Smear)	4,438	NR	
	Liba room	Measurement of Loose Material (Smear)	328	NR	
Beta Gamma activity (dpm/100 cm ²)	Hallway	Measurement of Loose Material (Smear)	16,636	NR	20
	Store room	Measurement of Loose Material (Smear)	9,242	NR	
	Liba room	Measurement of Loose Material (Smear)	695	NR	

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Belco 4th floor

Radiological Parameter (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	Store room	Direct contact	120	10	15
		Measured at Waist level	70		
Radon-222 (pCi/L)	4th floor	not applicable	6.5	NR	4
Alpha activity (dpm/100 cm ²)	Store room	Measurement of Loose Material (Smear)	19	NR	20
Beta Gamma activity (dpm/100cm ²)	Store room	Measurement of Loose Material (Smear)	<MDA	NR	20

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Belco 5th floor

Radiological Parameter (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	Rental area	Direct contact	800	10	15
		Measured at Waist level	800		
Alpha activity (dpm/100 cm ²)	Rental area	Measurement of Loose Material (Smear)	247	NR	20
Beta Gamma activity(dpm/100 cm ²)	Rental area	Measurement of Loose Material (Smear)	516	NR	20

177 Cherry Street (Buildings K and L) (vacant)

It is unclear if there is radium contamination in these vacant buildings. These buildings are not mentioned in the ATSDR PHA (1999). They are included in this summary for completeness.

205 Cherry Street (Building O) (Ville Swiss Automatics)

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Ville Swiss Automatics Automotive 3rd through 5th Floors

Radiological Parameters (units)	Location	Measurement Description	Maximum Level	Background	CL	
Gamma radiation (uR/hr)	1st floor	Direct contact	Nd		15	
		Measured at Waist level	Nd			
	2nd floor	Direct contact	Nd			
		Measured at Waist level	Nd			
	3rd floor	Direct contact	100	20		
		Measured at Waist level	20			
	4th floor	Direct contact	40	20		
		Measured at Waist level	20			
5th floor	Direct contact	40	13			
	Measured at Waist level	13				
Radon-222 (pCi/L)	4th floor	Not applicable	0.3		4	

215 Cherry Street (Buildings R and T) (vacant)

This address and buildings are not mentioned in the ATSDR PHA (1999); however, Haley & Aldrich (2013) mention radium contamination at 215 Cherry Street.

232 N. Elm Street (Buildings I and J) (NOW)

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): NOW 3rd through 5th Floors

Town: Waterbury Clock Company Name: Waterbury Clock Company Current Occupant(s): Not SD through 5th floors					
Radiological Parameters (units)	Location	Measurement Description	Maximum Level	Background	CL
Gamma radiation (uR/hr)	3rd floor	Direct contact	60	10	15
		Measured at Waist level	18		
	4th floor	Direct contact	180	12	
		Measured at Waist level	35		
	5th floor	Direct contact	4,000	12	
		Measured at Waist level	125		
Radon-222 (pCi/L)	3rd floor	Not applicable	0.8	NR	4
	4th floor	Not applicable	8.5		

In 2001, the CT State Bond Commission approved \$750,000 to support cleanup of radioactive material found at old clock factory sites in Bristol, New Haven, Thomaston and Waterbury. It is unknown if these clean-up funds were allocated to the former Waterbury Clock Company site (Musante, 2001).

In 2003, the Valley Council of Governments (in Derby CT) contracted with Sciencetech Inc. to provide radiological surveys in former clock factory buildings in the townships of Waterbury, Bristol and Thomaston as part of the Connecticut Radium Decontamination and Decommissioning Project. Surveys in the former Waterbury Clock Company building conducted by Sciencetech Inc. identified radiological

contaminated areas in Belco, Ville Automatics, NOW, and Enterprise Apartments). Radiological survey data consisted of background counts per minute and maximum gross contact counts per minute and are presented below. (Note: Additional details of the 2003 Sciencetech radiological surveys are not known.)

2003 Radiological Survey Results for the former Waterbury Clock Buildings (Sciencetech, 2003)

Only addresses mentioned in the Sciencetech 2003 report are included here.

13 Cherry Avenue (Buildings A, B, C, D, F, and M) (Enterprise Apartments)

<u>Enterprise Apartments</u>				<p>12 apartments are considered to be affected in The Enterprise Apartments. Apt. 507, 514 and 525 are vacant and all others are occupied.</p> <p>All spots are small and discrete either in the bedrooms or Living Rooms, except for #525 where the bathroom is shiny from an area in the hallway on the 5th floor. There is a small spot by the baseboard that requires remediation.</p> <p>All apartments are carpeted over lay subflooring.</p>						
Photo Page	Town	Building	Location	Contamination Area	Surface	Approximate Area Size	Background Counts	Maximum Gross Counts (on contact)	18" Gross Count	Comments
EA-2	Waterbury	Enterprise	Apt 507 (Vacant)	Corner of Living Room floor	Carpet over lay subflooring	1 ft x 1 ft	8,000	80,000		✓
EA-2	Waterbury	Enterprise	Apt 507 (Vacant)	Corner of Bedroom floor	Carpet over lay subflooring	1 ft x 1 ft	8,000	100,000		✓
EA-3	Waterbury	Enterprise	513-514 Hallway	Hallway floor	Carpet over lay subflooring	Spot	7,500	45,000		
EA-3	Waterbury	Enterprise	513-514 Hallway	Floor area inside waste storage room.	Tile	Spot	7,500	27,000		
EA-4	Waterbury	Enterprise	Apt 514 (Vacant)	Living Room floor	Carpet over lay subflooring	4 ft x 3 ft	8,000	70,000		✓
EA-4	Waterbury	Enterprise	Apt 514 (Vacant)	Bedroom 2 floor	Carpet over lay subflooring	3 ft x 3 ft	8,000	75,000		✓
EA-5	Waterbury	Enterprise	Apt 514 (Vacant)	Hallway floor by kitchen	Carpet over lay subflooring	Spot	7,500	10,000		✓
EA-6	Waterbury	Enterprise	514 Hallway	Floor area along window	Carpet over lay subflooring	Series of floor spots	7,500	28,000 - 38,000		
EA-7	Waterbury	Enterprise	Apt 515 (Occupied)	Living Room floor along windows	Carpet over lay subflooring	Spots	8,000	28,000 - 58,000		✓
EA-8	Waterbury	Enterprise	525 Hallway	Hallway floor	Carpet over lay subflooring	Spot (source)	8,000	960,000		
EA-9	Waterbury	Enterprise	Apt 520 (Occupied)	Bedroom floor corner	Carpet over lay subflooring	Spot	8,000	22,000		✓
EA-10	Waterbury	Enterprise	Apt 417 (Occupied)	Living Room pillar	Carpet over lay subflooring	Spot	8,000	225,000		✓

39 Cherry Avenue (Buildings G) (formerly Belco, currently vacant and owned by NOW)

Photo Page	Town	Building	Location	Contamination Area	Surface	Approximate Area Size	Background Counts	Maximum Gross Counts (on contact)	Estimated 10" Count	Comments
	Waterbury	Belco	6th Floor	Entry Floor Needs Cleanup (uncontaminated) (fractious)	Wood flooring	251 ft x 41 ft				IFF says 6th floor is unaffected.
B-4	Waterbury	Belco	6th Floor	Floor in Left Machines	Wood flooring	1 ft x 7 ft	8,000	38,000		
B-5	Waterbury	Belco	6th Floor	Floor in Left Machines	Wood flooring	Spot	8,000	40,000		
B-6	Waterbury	Belco	6th Floor	Floor in Left Machines	Wood flooring	Spot	8,000	58,000		
B-7	Waterbury	Belco	6th Floor	Floor in Left Machines, by south pillar	Wood flooring	Spot (three background in surrounding 2 ft x 2 ft area)	8,000	700,000		
B-8	Waterbury	Belco	6th Floor	Floor in NB	Wood flooring	Behind Rising Door	8,000	60,000		
B-9, B-10	Waterbury	Belco	6th Floor	NB floor along rolling door wall	Wood flooring	3 ft x 8 ft (30 ft x 12 ft area in "west")	8,000	28,000	115,000	2 ft U/LH
B-10	Waterbury	Belco	6th Floor	NB floor by pillar	Wood flooring	Spot	8,000	42,000		
B-11	Waterbury	Belco	6th Floor	NB floor by flag	Wood flooring	Various spots (area needs to be delineated)	8,000	40,000		
B-12	Waterbury	Belco	6th Floor	NB floor	Wood flooring	Various spots	8,000	45,000		
B-13	Waterbury	Belco	6th Floor	NB wall by window	Painted brick	Spot	10,000	230,000	27,000	40 ft U/LH
B-13	Waterbury	Belco	6th Floor	NB floor by window	Wood flooring	Spot	10,000	280,000	29,000	
B-14	Waterbury	Belco	6th Floor	Leatherwork floor	Wood flooring	Spot	8,000	188,000		
B-15	Waterbury	Belco	6th Floor	Leatherwork floor	Wood flooring	5 ft x 12 ft	8,000	30,000		
B-16	Waterbury	Belco	6th Floor	Leatherwork floor around most pillars	Wood flooring	Around most pillars	8,000	25,000		Most pillars were 20,000
B-17, 18, 19	Waterbury	Belco	6th Floor	Throughout entire floor	Wood flooring	Various spots	8,000	80,000		Stopped - too many spots and too little time to find them all
B-21	Waterbury	Belco	7th Floor	Belt Storage floor by desk	Wood flooring	Spot	8,000	60,000		
B-22	Waterbury	Belco	7th Floor	Belt Storage floor by window	Wood flooring	Spot	8,000	30,000		
B-23	Waterbury	Belco	7th Floor	Belt Storage floor by wall	Wood flooring	Spot	10,000			
B-24	Waterbury	Belco	7th Floor	Storage 2 floor by pipe	Wood flooring	Spot	8,000	28,000		
B-26	Waterbury	Belco	7th Floor	Storage 2 floor along window	Wood flooring	20 ft x 2 ft	8,000		24,000	
B-27	Waterbury	Belco	7th Floor	Storage 2 floor by fan	Wood flooring	Spot	8,000			
B-28, 29	Waterbury	Belco	7th Floor	Storage 2 by window	Wood flooring	Various spots	8,000			
B-31	Waterbury	Belco	7th Floor	Rental Area floor spot	Wood flooring	Various spots	8,000	72,000		
B-32	Waterbury	Belco	7th Floor	Rental Area floor spot by Area 40	Wood flooring	Various spots	8,000	80,000		
B-38	Waterbury	Belco	Third Floor	Liba Room A floor area under desk by rolling door	Wood flooring	3 ft x 3 ft	8,000	130,000		
B-39	Waterbury	Belco	Third Floor	Liba Room A floor area along window	Wood flooring	62 ft x 2 ft	8,000	20,000		
B-40	Waterbury	Belco	Third Floor	Liba Room A around most pillars	Wood flooring	Around most pillars	8,000	40,000		
B-41	Waterbury	Belco	Third Floor	Liba Room A floor	Wood flooring	Spot	8,000			
B-42	Waterbury	Belco	Third Floor	Liba Closet floor	2 in. deep concrete poured over wood	Liba storage across room	8,000	120,000-300,000	66,000	80 U/LH
B-42	Waterbury	Belco	Third Floor	Liba Closet floor by pillar	2 in. deep concrete poured over wood	1 ft x 12 ft	8,000	80,000	38,000	
B-43	Waterbury	Belco	Third Floor	Floor between Liba Room A and B	Wood flooring	Spot	8,000	80,000		
B-44	Waterbury	Belco	Third Floor	Liba Room B floor, walls and ceiling	Wood flooring	Kitchenary Contamination (extensive)	8,000		400,000	380 U/LH; Extensive contamination. The size of the room was unknown.
	Waterbury	Belco	Third Floor	Liba Room B hallway	Wood flooring	Contamination	8,000		490,000	Size of area is larger than proposed. Area identified in that map is not to scale. 350 U/LH

232 N. Elm Street (Buildings I and J) (NOW)

<p>NOW</p> <p>3rd, 4th and 5th floors are affected, with a total of 13 areas. This is where NOW houses a number of small offices for a variety of businesses. All of these contaminated areas are small in size and require minimal remediation, except for the Project Read Room on the 5th floor where an area approximately 2 meters x 2 meters in the corner by the window requires remediation.</p>										
Photo Page	Town	Building	Location	Contamination Area	Surface	Approximate Area Size	Background Counts	Maximum Gross Counts (on contact)	Estimated 18" Count	Comments
N-4	Waterbury	NOW	Reading Room (Rec Area) Store Room Floor 5	Corner under files	Unable to see under boxes	Spot?	8,000	28,000		
N-3	Waterbury	NOW	Reading Room (Rec Area) Floor 5	Along windows	Carpet over lay subflooring	3 ft x 6 ft (Proposal says 2 ft x 2 ft)	8,000	> 1,000,000		30,000 in middle by wall, may need to investigate office along wall-locked and have high probability of being contaminated as they connect Reading room to Waiting room which both have contamination in the same area (along windows).
N-5	Waterbury	NOW	Fourth Floor Hallway	Floor by pillar	Carpet over lay subflooring	Spot	8,000	34,000		
N-6	Waterbury	NOW	Office (Computer Room) Floor 4	Floor	Carpet over lay subflooring	Spot	8,000	100,000		
N-7	Waterbury	NOW	Waiting Room Floor 4	Floor area along windows	Carpet over lay subflooring	4 ft x 6 ft (Proposal says "small" areas)	8,000	160,000		W2C
N-8	Waterbury	NOW	Front Office Floor 4	Floor under desk	Carpet over lay subflooring	Spot	8,000	80,000		
N-9	Waterbury	NOW	Kitchen Floor 4	Floor behind stove	Tile	Spot	8,000	26,000		"warm" by window
N-10	Waterbury	NOW	Family Preser Floor 4	Spotty contamination	Carpet over lay subflooring	Difficult to tell (needs more survey)	9,000	30,000		W2C General area is 24,000
N-11	Waterbury	NOW	Family Preser Manager's Office Floor 4	Floor by chairs and behind bin	Carpet over lay subflooring	Various Spots	9,000	20,000		W2C General area is 24,001
N-12, 13	Waterbury	NOW	Headstart (Law Office) Floor 4	Corner by wall	Carpet over lay subflooring	1 ft x 6 in	8,500	44,000		W2C
N-14	Waterbury	NOW	Headstart (Law Office) Floor 4	Middle pillar-up to 5 ft	Concrete	Up length of pillar up to 5 ft	8,500	83,000		
N-14	Waterbury	NOW	Headstart (Law Office) Floor 4	Floor by window and pillars	Carpet over lay subflooring	Various Spots	8,500	130,000		W2C
N-14	Waterbury	NOW	Headstart (Law Office) Floor 4	Front Left Window	Carpet over lay subflooring	Various Spots	8,500	250,000		W2C
N-15	Waterbury	NOW	RSVP Office Floor 3	By window and outlet	Carpet over lay subflooring	Spot	8,000	13,000		"warm" by window

According to the CT-DEP (2009), hand-written notes (author unknown) were provided for the Scientech cleanup in 2004. In the former Belco facility (39 Cherry Avenue, building G), workers removed flooring materials on the 5th and 6th floors and determined that about 50% was cleared for disposal. For Enterprise Apartments (13 Cherry Avenue, buildings A, B, C, D, F, and M), cleanup began by removing flooring in apartments 507, 514, and 525. For NOW (232 N. Elm, buildings I and J) and the rest of Enterprise Apartments, cleanup began but was stopped due to discovery of asbestos. It is unclear if the remediation by Scientech was completed at all 3 of the facilities (Belco, Enterprise Apartments, and NOW).

In 2011, EPA awarded New Opportunities of Waterbury, Inc. (NOW) a series of three \$200,000 grants to clean up Waterbury Clock Company and other sites under the Brownfields Program. The "Analysis of Brownfields Cleanup Alternatives, Cherry Street Project: 0 Cherry Avenue, 39 Cherry Avenue, 177 Cherry Street, 215 Cherry Street, Waterbury, Connecticut" was produced by Haley & Aldrich, Inc. (September, 2013). The funding and analysis indicate contamination issues persist; however, the report does not mention recent radiation surveys or specific information on extent of contamination. It is unknown if the remediation occurred and what exactly was remediated with this funding.

In conclusion, it is unclear from the public records if remediation of radium was completed for the facilities where remediation was initiated (13 Cherry Avenue, Enterprise Apartments; 39 Cherry Avenue, Belco; and 232 N. Elm, NOW). It is unclear if remediation of radium was ever initiated in the other

contaminated facilities (205 Cherry Street, Ville Swiss Automatics; 215 Cherry Street, vacant). Specifically, the State of Connecticut has indicated that remediation of Enterprise Apartments is complete (CT-DEP, 2004); however, NRC staff will confirm this in further discussions with the State of Connecticut, as it is unclear from the June 9, 2004 letter that all affected areas were cleaned up. It is important to note that even though radiation was detected in some areas of Enterprise Apartments, all of these areas may not merit cleanup. If the calculated doses were within the State's release criteria in place at that time, cleanup would not have been needed.

Summary of Current Radium Levels:

As of November 2015, current levels of radium are unknown based on information reviewed for this report.

Location and population near the sites

Ville Swiss Automatics (205 Cherry Street, building O) has around 12 employees; NOW (232 N. Elm Street, buildings I and J) has 500 employees spread across 14 different U.S. locations (unknown how many work in the Waterbury office); and Enterprise Apartments (13 Cherry Avenue, buildings A, B, C, D, F, and M) has 134 apartments with 1-4 people per apartment, ranging in ages from newborn through elderly. It also should be noted that there are residential areas within close proximity to the former Waterbury clock company.

Waterbury, a city in New Haven County, CT, is on the Naugatuck River, 33 miles southwest of Hartford and 77 miles northeast of New York City. According to the 2010 U.S. Census, the population of Waterbury was 110,366; the 2014 population estimate for the city was 109,307 (United States Census Bureau, 2015).



Figure 1. Location of Waterbury Clock Company Facilities and surrounding Affected Facilities (1 – 13 Cherry Ave, buildings A, B, C, D, F, and M, Enterprise Apartments; 2 – 0 Cherry Ave, building #7, vacant; 3 – 177 Cherry St, buildings K and L, vacant; 4 – 205 Cherry St, building O, Ville Swiss Automatics; 5 – 215 Cherry St, buildings R and T, vacant; 6 – 232 N Elm St, buildings I and J, NOW; 7 – 39 Cherry Ave, building G, formerly Belco, now vacant and owned by NOW) (Google Earth, 2015)

Current State/other Federal involvement

In 2001, the CT State Bond Commission approved \$750,000 to support cleanup of radioactive material found at old clock factory sites in Bristol, New Haven, Thomaston and Waterbury. It is unknown how much of these clean-up funds were allocated to the former Waterbury Clock Company site and how much cleanup was completed with these funds.

In 2013, Haley & Aldrich (2013) prepared an Analysis of Brownfields Cleanup Alternatives that detailed proposed cleanup strategies for the following Waterbury addresses: 0 Cherry Avenue, 39 Cherry

Avenue, 177 Cherry Street, and 215 Cherry Street. Grant fund was limited to \$200,000 per property. It is unknown how much cleanup was completed with these funds.

Current access, activities, and uses at the site

0 Cherry Avenue (Building #7) (vacant)

After the Waterbury Clock Company closed, this building was used as a social club from 1950 to 1956 and then as a bakery from 1959 to 1977. The building has been vacant since 1977 (Haley & Aldrich, 2013).



Figure 2. 0 Cherry Avenue (Building #7, vacant) (Google Earth, 2015)

13 Cherry Avenue (Buildings A, B, C, D, F, and M) (Enterprise Apartments)

These buildings are currently occupied by Enterprise Apartments. Enterprise Apartments are designed for people aged 62 or older or for younger people with disabilities. There are 134 apartments.



Figure 3. 13 Cherry Avenue (Buildings A, B, C, D, F, and M; Enterprise Apartments) (Google Earth, 2015)

39 Cherry Avenue (Building G) (formerly Belco, currently vacant and owned by NOW)

After Waterbury Clock Company closed, operations at this building included the manufacture and distribution of leather belts, handbags, and neckties by the Belco Company. The 39 Cherry Avenue building has been vacant since 2004 (Haley & Aldrich, 2013). NOW currently owns this building and has plans to redevelop it in the future.



Figure 4. 39 Cherry Avenue (Building G; formerly Belco, now vacant and owned by NOW)
(Google Earth, 2015)

177 Cherry Street (Buildings K and L) (vacant)

177 Cherry Street was used as a clothing manufacturer and manufacturer of metal products from the 1960s through the 1970s. There is limited information on site use since the 1980s. The building is currently vacant (Haley & Aldrich, 2013).



Figure 5. 177 Cherry Street (Buildings K and L, vacant) (Google Earth, 2015)

205 Cherry Street (Building O) (Ville Swiss Automatics)

205 Cherry Street was used as an office and storage space after Waterbury Clock Company closed (Haley & Aldrich, 2013). It is currently occupied by Ville Swiss Automatics, a CNC, Swiss and Escomatic Screw machine company.



Figure 6. 205 Cherry Street (Building O, Ville Swiss Automatics) (Google Earth, 2015)

215 Cherry Street (Buildings R and T) (vacant)

From 1953 through 1958, the building was occupied by a manufacturer of underwear, surgical instruments, and metal products. From 1960s through 2002, the building's use fluctuated from being vacant to a clothing and leather products manufacturer. The 215 Cherry Street building has been vacant since around 2004 (Haley & Aldrich, 2013).



Figure 7. 215 Cherry Street (Buildings R and T, vacant) (Google Earth, 2015)

232 N. Elm Street (Buildings I and J) (NOW)

New Opportunities of Waterbury, Inc., (NOW) owns this former clock factory building. All original windows have been replaced, the outside has been resurfaced, and the interior has been refinished for office use (Haley & Aldrich, 2013). NOW also plans to turn other vacant parts of the clock factory into a hydroponic farm, while another agency hopes to move a plumbing company onto the century-old industrial campus.



Figure 8. 232 N. Elm Street (Buildings I and J, NOW) (Google Earth, 2015)

Existing Engineering Controls

According to figures 2-7 (Google Earth, 2015), the areas around the vacant building are fenced; however, it appears to be a deterrent not a preventative measure to access. In addition, there is mention by Haley & Aldrich (2013) of vandalism inside some of the buildings, indicating that existing controls are not sufficient to prevent trespassing.

Prioritization Ranking

Radium is confirmed to have been present at the site based on historical documentation of radium use and radiological surveys. The site consists of buildings that are potentially contaminated by radium. Some of the buildings are occupied. The extent of previous remediation at all locations is unknown. Therefore, the site is classified as Tier 1.

References

Agency for Toxic Substances and Disease Registry (ATSDR). Public Health Implications of Radiation Contamination at Former Clock Factories Located in Bristol (Hartford County), New Haven (New Haven County), Thomaston (Litchfield County), and Waterbury (New Haven County) Connecticut , January 29, 1999. <http://www.atsdr.cdc.gov/HAC/pha/PHA.asp?docid=959&pg=0>

CT Department of Environmental Protection (DEP). 2009. Correspondence from CT-DEP to NRC NMSS. Collection of pdf documents about Connecticut Clock Companies. Document dates range from 1998-2004. CT File.pdf, 1806 pages.

CT Department of Environmental Protection (DEP). 2004. Correspondence from CT-DEP to Jerome Alexander, Property Manager of Enterprise Apartments. Letter defines status of complete remediation for apartments 514, 507, and 525. June 9, 2004.

CT Department of Public Health (DPH). 1998a. Former Waterbury Clock Factory: Questions and Answers About Radium. April 15, 1998.

http://www.ct.gov/dph/lib/dph/environmental_health/eoha/atsdr/waterbury_clock_fs.pdf.

CT Department of Public Health (DPH). 1998b. Former Clock Factory Sites in Waterbury: Update. September 1998.

http://www.ct.gov/dph/lib/dph/environmental_health/eoha/atsdr/waterbury_clock_update.pdf

Google Earth. Accessed February 2015. <https://www.google.com/maps/>.

Haley & Aldrich, Inc. 2013. Analysis of Brownfields Cleanup alternatives, Cherry Street Project: 0 Cherry Avenue, 39 Cherry Avenue , 177 Cherry Street, 215 Cherry Street, Waterbury, Connecticut. September, 2013.

<http://www.newopportunitiesinc.org/sites/default/files/public-notice/2013-09-brownsfields-analysis.pdf>.

Musante, F. 2001. Residue From Industrial Past Haunts State. The New York Times. June 24, 2001.

<http://www.nytimes.com/2001/06/24/nyregion/residue-from-industrial-past-haunts-state.html>.

Quigley, A. 2011. After Glow - 90 years Ago Workers at the Waterbury Clock Company Began Dying After Painting Radium on Clock Dials. The Waterbury Observer. October 2011.

<http://www.waterburyobserver.org/node/586>.

Newoppinc.org. 2012. City's Clock Factories Long Overdue for an Overhaul. August 11, 2012.

<http://www.newoppinc.org/news/2012/citys-clock-factories-long-overdue-for-an-overhaul%20>.

Scienteck 2003. Connecticut Radium Sites Verification Survey for the Valley Council of Governments, Connecticut Radium Decontamination and Decommissioning Project. Scienteck, Inc. 143 West Street, New Milford, CT 06776. October 24, 2003.

United States Census Bureau. Accessed October 2015.

<http://quickfacts.census.gov/qfd/states/09/0901150.html>.

Summary of Waterbury Clock Company Information in "CTfile.pdf"(CT DEP, 2009)

Site_Name	Source_date	Title	Pages
Waterbury Clock Company	March 2004	Belco factory hand written notes	1371-1372
Waterbury Clock Company	Jan 1998- Jan 1999	Chronology of Events of Radium Dial Clock Factories	1-2
Waterbury Clock Company	unknown	Clock Factory Contacts	
Waterbury Clock Company	April 21, 1998	Department of Energy (DOE) Radiological Assistance Report cover letter and Radiological Assistance Call notes	744-747
Waterbury Clock Company	1999	Document number 82A9499	511-514
Waterbury Clock Company	unknown	Information about Belco from CT file	1626-1631; 1654-1671
Waterbury Clock Company	Jan 12 - Apr 16, 2004	Notes for Enterprise Apartment 507	1359-1363, 1369
Waterbury Clock Company	Jan 20 - Apr 16, 2004	Notes for Enterprise Apartment 514 cleanup	1359-1363, 1369
Waterbury Clock Company	Apr 1 - Apr 16, 2004	Notes for Enterprise Apartment 525 (hall) cleanup	1359-1363, 1369
Waterbury Clock Company	January 29, 1999	PUBLIC HEALTH ASSESSMENT; PUBLIC HEALTH IMPLICATIONS OF RADIATION CONTAMINATION AT FORMER CLOCK FACTORIES LOCATED IN BRISTOL (HARTFORD COUNTY), NEW HAVEN (NEW HAVEN COUNTY), THOMASTON (LITCHFIELD COUNTY), AND WATERBURY (NEW HAVEN COUNTY) CONNECTICUT	1578-1619
Waterbury Clock Company	April 4, 1998	Radium Contamination at Former Watch Manufacturers in Waterbury, CT	3-33
Waterbury Clock Company	April 4, 1998	Radium Contamination at Former Watch Manufacturers in Waterbury, CT	3-33
Waterbury Clock Company	April 4, 1998	Radium Contamination at Former Watch Manufacturers in Waterbury, CT	3-33
Waterbury Clock Company	April 4, 1998	Radium Contamination at Former Watch Manufacturers in Waterbury, CT	3-33
Waterbury Clock Company	unknown	Update for the Old Waterbury Clock Factory Complex	1481-1484
Waterbury Clock Company	unknown	Update for the Old Waterbury Clock Factory Complex	1481-1484
Waterbury Clock Company	unknown	Update for the Old Waterbury Clock Factory Complex	1481-1484

Radium

Radium was one of the first radioactive elements ever discovered. Marie and Pierre Curie unlocked the atom's secrets in 1898, opening the door for important innovations using radioactivity in medicine and industry. Radiation quickly became a consumer and medical sensation and radium was the posterchild. Experts concluded radiation was a lifesaver after finding it reduced tumor growth and was present in the waters at some health spas. Soon there were many radium products on the market that purported to improve health and vitality. But tragic stories began to emerge of the health impacts. Perhaps the most well-known is the "radium girls," who painted watch faces with glow-in-the-dark radium paint and developed infections and jaw cancer from licking their brushes into fine points.

Early regulation

When evidence of harm began to emerge in the early 1900s, the states each made their own decisions about how to regulate. Courts also took varying approaches on victim compensation. The federal government took action to guard against false advertising and regulate mail shipments, conducted studies, and organized some voluntary protections.

As radioactive materials became more widely available following World War II, they remained largely under state control. Radium use declined in medical and consumer products in favor of other safer materials.

Regulation today

Work on securing radioactive materials took on new urgency following the terrorist attacks on the United States in September 2001. Those attacks prompted the International Atomic Energy Agency to develop a code of conduct in 2004 to limit the potential for malicious acts. That code places one form of radium, known as radium-226, and other radioactive materials into categories based on their quantity and potential hazard.

The NRC has specific security requirements tied to these categories. As support for the IAEA code grew, Congress passed the Energy Policy Act in 2005, giving the NRC authority over radium-226. This law marked the first time the federal government had a comprehensive role in ensuring the safe use of radium-226.

Many states had developed strong programs for regulating radium and other naturally-occurring radioactive materials and it took time to transition authority. The NRC had regulations in place and fully assumed oversight in 2009. Initially, NRC staff worked exclusively with the military to identify sites

where radium might be present. These discussions made clear that the NRC's role would include ensuring that sites where radium was used are maintained in a way that protects public health and safety.

In 2016, the NRC and Department of Defense signed a [Memorandum of Understanding \(MOU\)](#) describing roles in the cleanup of radium and other unlicensed radioactive materials at military sites. The MOU and a [Regulatory Issue Summary](#) clarify NRC's jurisdiction over military radium. In late 2016, the NRC began monitoring two sites under the MOU: Treasure Island Naval Station in San Francisco and Dugway Proving Ground in Utah.

In 2013, the agency learned of two commercial sites where radium-226 had been found and other federal agencies had gotten involved. The Environmental Protection Agency was overseeing portions of the Waterbury Clock Company in Connecticut. The National Park Service was overseeing Great Kills Park in New York.

NRC staff is working with the current owner of the Waterbury Clock Company site. Contaminated areas of the site are under EPA oversight through its Brownfields Program, which provides assistance to clean up contaminated properties. NRC staff is working with EPA to clarify oversight roles and responsibilities under that program.

In 2016, NRC staff began developing an MOU with the National Park Service that will also clarify the NRC's jurisdiction over radium at Great Kills Park. The NRC is monitoring cleanup activities that the Park Service is implementing under Superfund, more formally known as the Comprehensive Environmental Response, Compensation and Liability Act.

Those projects prompted a search to identify sites in NRC's jurisdiction where radium was used, and to find out how much, if any, cleanup was done. This search was not a result of any known health and safety issues. Rather, because of its mandate to protect public health and safety, the NRC wanted to be sure there were no additional sites that might pose a risk.

With the help of the Oak Ridge National Laboratory, the NRC began to develop a fuller picture of commercial radium use. The lab produced a [catalog](#) of the various products developed and sold to the public in the early 20th century. By reviewing publicly available records, Oak Ridge identified sites where radium may have been used to make consumer goods. Then the lab looked for any cleanup records. Oak Ridge transmitted the results to the NRC in November 2015. Since that time, the agency has been working on plans to gather more information about those sites.

The NRC is working with state and local governments to identify any additional records that may help clarify whether any site cleanup has taken place. The goal is to ensure that public health and safety is adequately protected at these sites.

October 2016

OTHER KEY OFFICES

- ◆ The **Office of Enforcement** develops policies and programs to enforce NRC requirements. Enforcement action is used as a deterrent to emphasize the importance of compliance with regulatory requirements and to encourage prompt identification and prompt, comprehensive correction of violations. The office manages major enforcement actions against licensees, and assesses the effectiveness and uniformity of enforcement actions taken by NRC regional offices. Enforcement powers include notices of violations, fines, and orders to modify, suspend or revoke a license. Two separate offices are responsible for investigations.
- ◆ The **Office of Investigations** conducts investigations of licensees, applicants, contractors and vendors. The office investigates all allegations of wrongdoing by individuals or organizations other than NRC employees and NRC contractors. In addition, the office keeps abreast of inquiries and inspections and advises on the need for formal investigations. It also keeps other components of the agency informed of matters under investigation as they affect safety.
- ◆ The **Office of the Inspector General** is a statutory post mandated by the Inspector General Amendments Act of 1988. The office conducts independent reviews and appraisals of internal NRC programs and conducts investigations of alleged wrongdoing by NRC employees and contractors.

Office of Public Affairs

Washington, DC 20555-0001

Telephone: (301) 415-8200

Fax: (301) 415-3716

E-mail: opa.resource@nrc.gov

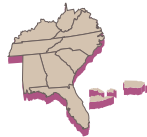
Website: www.nrc.gov

Regional Public Affairs Offices



Region I

2100 Renaissance Blvd., Suite 100
King of Prussia, PA 19406-2713
(610) 337-5330 or 337-5331



Region II

245 Peachtree Center Ave., NE., Suite 1200
Atlanta, GA 30303-1257
(404) 997-4417 or 997-4416



Region III

2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352
(630) 829-9663 or 829-9662



Region IV

1600 E. Lamar Blvd.
Arlington, TX 76011-4511
(817) 200-1128



NUREG/BR-0099, Rev. 14
June 2016

STAY CONNECTED



©NRCgov



U.S. Nuclear Regulatory Commission Overview



NRC MISSION

The NRC licenses and regulates the Nation's civilian use of radioactive materials to protect public health and safety, promote the common defense and security, and protect the environment. Specifically, the NRC regulates commercial nuclear power plants; research, test and training reactors; nuclear fuel cycle facilities; and the use of radioactive materials in medical, academic and industrial settings.

The agency also regulates the transport, storage, and disposal of radioactive materials and waste, and licenses the import and export of radioactive materials. While the NRC only regulates industries within the United States, the agency works with agencies around the world to enhance global nuclear safety and security.

STATUTORY AUTHORITY

The Energy Reorganization Act of 1974 created the NRC from the Atomic Energy Commission. The new agency was to oversee — but not promote — the commercial nuclear industry. The agency began operations on January 18, 1975. The NRC's regulations can be found in Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR).

The NRC, its licensees (those licensed by the NRC to use radioactive materials), and the Agreement States (States that assume regulatory authority over use of certain nuclear materials) share a responsibility to protect public health and safety and the environment. Federal regulations and the NRC's regulatory program are key, but the primary responsibility for safely handling and using these materials lies with the licensees.



ORGANIZATIONS AND FUNCTIONS

The NRC's Commission is made up of five members nominated by the President and confirmed by the U.S. Senate for 5-year terms. The President designates one member to serve as Chairman. The Chairman acts as the principal executive officer and spokesperson of the agency. The members' terms are staggered so that one Commissioner's term expires on June 30 every year. No more than three Commissioners can belong to the same political party.

The Commission formulates policies and regulations governing nuclear reactor and materials safety, issues orders to licensees, and adjudicates legal matters. The Executive Director for Operations carries out the policies and decisions of the Commission, and directs the activities of the program and regional offices. The NRC has about 3,600 employees and an annual budget of about \$1 billion.

The NRC is headquartered in Rockville, Md., and has four regional offices. The **Regional Offices** conduct inspection, enforcement (in conjunction with the Office of Enforcement), investigation, licensing, and emergency response programs. At least two NRC employees, called Resident Inspectors, are assigned to, and work out of, each nuclear power plant. The NRC also has a Technical Training Center in Tennessee.

The major program offices within the NRC include:

- ◆ **The Office of Nuclear Reactor Regulation.** Handles all licensing and inspection activities for existing nuclear power reactors and research and test reactors.
- ◆ **The Office of New Reactors.** Oversees the design, siting, licensing, and construction of new commercial nuclear power reactors.
- ◆ **The Office of Nuclear Security and Incident Response.** Oversees agency security policy for nuclear facilities and users of radioactive materials. It provides a safeguards and security interface with other Federal agencies and maintains the agency's emergency preparedness and incident response program.



- ◆ **The Office of Nuclear Material Safety and Safeguards.** Regulates activities and oversees the regulatory framework for the safe and secure production of commercial nuclear fuel and the use of nuclear material in medical, industrial, academic and commercial applications; uranium recovery activities; and the decommissioning of previously operating nuclear facilities. It regulates safe storage, transportation, and disposal of high- and low-level radioactive waste and spent nuclear fuel. The office also works with Federal agencies, States, and Tribal and local governments on regulatory matters.
- ◆ **The Office of Nuclear Regulatory Research.** Provides independent expertise and information for making timely regulatory judgments, anticipating problems of potential safety significance, and resolving safety issues. It helps develop technical regulations and standards and collects, analyzes, and disseminates information about the safety of commercial nuclear power plants and certain nuclear materials.

Three independent groups serve the Commission:

- ◆ **Advisory Committee on Reactor Safeguards,** mandated by statute, is a committee of scientists and engineers independent of NRC staff. They review and make recommendations to the Commission on all applications to build and operate nuclear power reactors, the safety aspects of nuclear facilities and the adequacy of safety standards. This includes update license amendments and license renewals.
- ◆ **Advisory Committee on the Medical Uses of Isotopes** is made up of physicians and scientists who consider medical questions and, when asked, give expert opinions to the NRC on the medical uses of radioactive materials.
- ◆ **Atomic Safety and Licensing Board Panel** provides a way for the public to get a full and fair hearing on civilian nuclear matters. Individuals who are directly affected by licensing action involving certain facilities producing or using nuclear materials may submit a request to participate in a hearing before these independent judges.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

We would like to work with you to schedule our initial site visit and answer any questions you might have. At your earliest convenience, please contact Mr. Matthew Meyer, Acting Branch Chief, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery and Waste Programs, Office of Nuclear Materials Safety and Safeguards, at (301) 415-6198, or Mr. Richard Chang, Project Manager, at (301) 415-5536.

Sincerely,

/RA/

John R. Tappert, Director
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 3038962

Enclosures:

1. Site Summary Report
2. Radium Backgrounder
3. U.S. Nuclear Regulatory Commission *Overview*

REGISTERED LETTER – RETURN RECEIPT REQUESTED

DISTRIBUTION:

RidsRgn1MailCenter R. Powell, RI T. Jackson, RI R. Chang, NMSS

ADAMS Accession No.: ML16277A195 (Pkg); ML16239A374 (Ltr)

OFFICE	DUWP/MDB/PM	DUWP/LA	RI/DNMS	OGC (NLO)	DUWP/MDB/BC (A)	DUWP/D
NAME	JWhited	SAchten	R. Powell	TCampbell	MMeyer	JTappert
DATE	09/27/2016	09/27/2016	09/28/2016	10/06/2016	10/01/2016	10/06/2016

OFFICIAL RECORD COPY