Identification and Evaluation of CERCLA 108(b) Power Generation, Transmission, and Distribution non-National Priority List (NPL) Removal Sites

US Environmental Protection Agency (USEPA)

Office of Land and Emergency Management (OLEM)

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Identification of CERCLA Removal Action Cases

EPA sought to evaluate the need for CERCLA 108(b) financial responsibility regulations at classes of facilities in the Chemical Manufacturing (NAICS 325), Petroleum and Coal Products Manufacturing (NAICS 324) and the Electric Power Generation, Transmission and Distribution (NAICS 2211) industries. Specifically, EPA sought to identify whether there were examples of pollution caused by activities within those industries that occurred under an environmental regulatory structure similar to today's that required taxpayer funded cleanups. EPA believes that this type of cleanup case would be indicative of the potential need for CERCLA 108(b) financial responsibility requirements. EPA prioritized identifying and analyzing Superfund NPL sites as those tend to be the largest cleanups with the greatest likelihood of significant taxpayer expenditures. However, to supplement this evaluation, EPA also examined a limited number of sites that are not listed on the NPL, but that required removal actions. This report is focused specifically on EPA's identification and evaluation of such non-National Priority List (NPL) Removal Sites within the Electric Power Generation, Transmission and Distribution.

SEMS Query

In order to establish a universe of non-NPL sites to investigate, EPA queried the EPA's SEMS database.[1] EPA conducted the query in November 2018. Within SEMS, EPA filtered the 83,000 records for sites that were Not on the NPL. This resulted in 7,565 sites. These sites include sites designated in SEMS as Removal Only Sites (where no site assessment work needed), Referred to Removal – Needs Further Remedial Assessment, and Referred to Removal – No Further Remedial Assessment Planned (NFRAP) . This approach erred on the side of over identifying potential damage cases as some of these candidate sites would be already accounted for as part of other NPL sites.

Next, EPA filtered the 363 sites by Primary and/or Secondary Sub Category Name in SEMS which EPA used as a proxy for the type of industrial activity that took place at the site. EPA, specifically looked at those identified as oil and gas refining, coke production, chemicals and allied products, chemicals/chemical waste, and electric power generation and distribution. This filtering yielded 363 removal sites.

Electric Power Generation, Transmission, and Distribution Sites (NAICS 2211)

The 363 non-NPL removal sites included sites at which any of the three additional classes – Chemical Manufacturing (NAICS 325), Petroleum and Coal Products Manufacturing (NAICS 324) and the Electric Power Generation, Transmission and Distribution (NAICS 2211) – were identified as the industry Primary and/or Secondary Sub Category Name[2]. At this point in the analysis, EPA turned its current focus to NAICS 2211. To evaluate whether the removal actions resulted from pollution that occurred under a modern regulatory regime for the NAICS 2211 sites, EPA then further eliminated the oil and gas refining, coke production, chemicals and allied products, and chemicals/chemical waste sites. This left the sites

[1] SEMS data for removal cases capture CERCLA responses but are not comprehensive of all potential releases. Alternative data sources reveal releases unrelated to CERCLA, and therefore not tracked in SEMS (e.g., non-CERCLA enforcement cases related to the Clean Air Act and Clean Water Act)

[2] SEMS industrial designations within SEMS were used to identify sites (damage case) for evaluation. Incomplete or misplaced designations may result in some cases going unidentified. No additional reviews of non-selected sites were performed unless EPA experience and program knowledge reveal glaring omissions from the list.

for which SEMS listed electric power generation and distribution as the Primary and/or Secondary Sub Category Name. From the original 363 non-NPL sites as identified, EPA found that just 23 of these 363non-NPL sites fall with NAICS 2211 and limited the remaining scope of its evaluation to these 23 sites[3].

Screening Out PRP Funded Actions

The focus of EPA's investigation was to identify sites at which pollution occurred in a modern environmental regulatory structure that required taxpayer funded cleanup. As a result, EPA conducted a preliminary review of the available site documents for each of the 23 NAICS 2211 non-NPL sites through the EPA's SEMS and On Scene Coordinator Response (OSC Response) databases. The information collected as part of this review is available in the docket to this action.[4]The documents available through the SEMS and OSC Response databases largely comprise Pollution Reports and Removal Action Memoranda. From this initial review, EPA identified 11 sites that appeared to possibly require government funded action or a mix of government and PRP funded action warranting further review. For two additional sites, based on readily available information EPA was unable to determine the response lead but these sites were carried through for further review, erring on the side of being over inclusive. This brought the total number of sites that EPA identified for further review to 13.

Analytical Steps and Methodology

Once EPA identified these 13 NAICS 2211 non-NPL sites at which removal actions were funded in part or in full by the government, EPA collected site-specific data from the documents available through the SEMS and OSC Response databases. The data collection included site operation and contamination dates to determine if the site may have operated and/or experienced contamination under a modern environmental regulatory regime. EPA also collected data on the nature of the operations at the site, the cleanup activity that occurred at the site, the contamination at the site, descriptions of the incident that caused the contamination, the sources of contamination, and the media at the site that was contaminated and was removed in the removal action. The data collected as described was entered into a spreadsheet for comparative purposes and can be reviewed within the docket.[5]

Of the 13 NAICS 2211 Removal sites that featured government funded cleanup activities for which EPA collected data, 8 were classified as fully funded by the government, leaving 5 which were thought to be funded by a mix of government and private sources.

Table 1 – Funding Sources for Cleanup Activities at Government Funded NAICS 2211 Removal Sites

Funding Source	Count
Government	8
Mixed	3
Unknown	2
Total:	**13**

[3] This list includes TVA Kingston site, although this site did not initially make the list using SEMS industry categorization filter. In this case, EPA relied on program knowledge to include this site for evaluation.

[4] INSERT DOCKET REFERENCEs

[5] INSERT DOCKET REFERENCE

Of the 13 NAICS 2211 Removal sites that featured government funded cleanup activities for which EPA collected data, 10 were associated with industry specific activities for NAICS 221112 – fossil fuel powered electric power generation, 2 were associated with industry activities for NAICS 221121 – electric power transmission systems, and 1 was associated with industry specific activities for NAICS 221122 – electric power distribution systems.

Table 2 – Six Digit NAICS Classifications for Government Funded NAICS 2211 Removal Sites

Six Digit NAICS	Industry Classification	Count
221112	Fossil fuel powered electric power generation facilities	10
221121	Electric power transmission systems	2
221122	Electric power distribution systems	1
	Total:	**13**

EPA also determined whether the contamination at the non-NPL sites was the result of a single, immediate releases or catastrophic incidents, versus a long-term, gradual release. Of the 13 NAICS 2211 non-NPL sites that featured government funded cleanup activities for which EPA collected data, there were single/catastrophic incidents at 5 sites and long-term, gradual releases at 10 sites. Note that the total count is more than 13 because a single site may have experienced both long-term releases and a catastrophic incident.

Table 3 – Contamination Timing at Government Funded NAICS 2211 non-NPL Sites

Contamination Timing	Count
Single Incident	5
Gradual	10
Total:	**15**

EPA also collected the contaminants that necessitated the removal action. At the 13 NAICS 2211 non-NPL sites that featured government funded cleanup activities for which EPA collected data, asbestos required removal at 6 sites, PCBs required removal at 4 sites, waste oil required removal at 4 sites, mercury required removal at 2 sites, lead required removal at 2 sites, arsenic required removal at 1 site, VOCs required removal at 1 site, and polynuclear aromatics required removal at 1 site. Note that the total count is more than 13 because at some sites, there was more than one contaminant that necessitated a removal action.

Table 4 – Contaminants that Necessitated Removal at Government Funded NAICS 2211 non-NPL Sites

Contaminant	Count
Asbestos	6
PCBs	4
Waste oil	4
Mercury	2
Lead	2
Arsenic	1
VOCs	1
Polynuclear aromatics	1
Total:	**21**

EPA also collected data on the cause or causes of single/catastrophic types of incidents that led to contamination. At the 13 NAICS 2211 non-NPL sites that featured government funded cleanup activities for which EPA collected data, mechanical failure led to contamination at 1 sites, a fire or explosion led to contamination at 2 sites, overflowing or overfilling of equipment or features led to contamination at 1 site, demolition led to contamination at 1 site, and the cause of contamination at 1 site was unknown. Note that an incident may be the result of more than one cause of contamination, which is why the total of these data is not the same as the total number of single incident releases. Note that the total count is more than the 5 sites at which a single or catastrophic incident occurred because more than one incident may have occurred at a given site.

Table 5 – Causes of Contaminating Incidents at Government Funded NAICS 2211 non-NPL Sites

Cause of Contaminating Incident	Count
Mechanical Failure (e.g., PCB oil released)	1
Transformer/Circuit Break Fire or Explosion (e.g., PCB oil released)	2
Overflowing or Overfilling	1
Demolition	1
Unknown	1
Total:	**6**

EPA also collected data on the sources of contamination or the contamination vectors that occurred at each site. Of the 13 NAICS 2211 non-NPL sites that featured government funded cleanup activities for which EPA collected data, 6 involved abandoned asbestos-afflicted material (e.g., debris piles), 5 had contaminated hazardous waste in abandoned drums or tanks (primarily abandoned PCB drums and transformers), 3 had contaminated soil (e.g., PCB), 1 involved discharge to surface water, and 1 involved disposal waste ponds. Note that more than one contamination source or vector may have been present at some sites, and at other sites documentation did not allow for a determination about the contamination source or vector.

Table 6 – Contamination Sources/Vectors at Government Funded NAICS 2211 non-NPL Sites

Contamination Source	Count
Abandoned Asbestos-Afflicted Material (e.g., debris piles)	6
Storage of Hazardous Substance or Waste in Drums or Tanks (primarily abandoned PCB drums and transformers)	5
Contaminated Soil - PCB	3
Discharge to Surface Water	1
Waste, Wastewater, Retention, Treatment Ponds or Lagoons, Trenches, or Ditches	1
Total:	**16**

Finally, EPA also collected information about the contaminated media at each site that needed to be removed or contained as part of cleanup activities. At the 13 NAICS 2211 non-NPL sites that featured government funded cleanup activities for which EPA collected data, cleanup involved: the removal of debris at 5 sites; soil at 5 sites; the containment of airborne pollution at 2 sites; the removal of buildings or structures at 2 sites; the removal or containment of liquid waste at 2 sites; the removal of surface soil at 2 sites; the removal of sludge at 1 site; and the removal of solid waste at 1 site. Note that more than one media may have been contaminated at a site, while at other sites documentation did not allow for a determination about the contamination, which is why the total number of contaminated media removed does not equal 13. Based on Table 6, 7, and 8, the handling and disposal of asbestos containing materials and PCB oil/wastes were the primary causes of contamination that necessitated the response actions at the 13 removal sites.

Table 7 – Contaminated Media at Government Funded NAICS 2211 non-NPL Sites

Contaminated Media	Count
Debris	5
Soil	5
Air	2
Buildings/Structures	2
Liquid Waste	2
Surface Soil	2
Sludge	1
Solid Waste	1
Total:	**20**

Screening Out Legacy Issues

From its thorough data collection about site operations, operations date, and contamination dates at the 13 NAICS 2211 sites that required government funded cleanup activities, EPA determined that the pollution at 8 of the sites was related to legacy practices. In accordance with our methodology, EPA views such legacy occurrences as not representative of the types of current-day risks that would warrant regulation under CERCLA 108(b).

Many of the legacy sites that EPA determined were not representative of modern risks and therefore did not warrant further investigations were former power plants or facility powerhouses that operators abandoned in the 1970s, including the Michelin Powerhouse in Middlesex, New Jersey (EPA ID NJC200400034), the Liberty Asbestos site in Lockport, New York (EPA ID NYN000206540), and the Highland Park Hospital site in Highland Park, Michigan (EPA IDA MIN000510200). At all three of these sites, former operators abandoned their operations and left contaminant laden waste at the site, which later necessitated removal actions. The Allis Chalmers Powerhouse site in Laporte, Indiana (EPA ID INN000509242) was a power generation facility that operated from the turn of the 20th century to 1983, at which point its owners also abandoned it. The information available at the other four sites was not detailed enough for EPA to determine when the sites were in operation and when they were abandoned, but it appears that site operations had ceased well before the discovery of contamination. EPA determined that the contamination resulting from historic practices at these sites was not representative of contamination risks at currently operating facilities.

This left just 5 sites where the pollution at issue may have occurred under modern regulatory regimes. For these five sites, EPA cross referenced the site operation and contamination dates with the implementation of relevant federal and, if available, state environmental regulations to determine if those relevant regulations were in place at the time of operations and when the pollution occurred. Detailed case narratives were prepared for each of these 5 cases and are included in Appendix III. The key findings of EPA's detailed evaluations for these 5 sites are summarized below.

Summary of Findings from the Detailed Review of NAICS 2211 Removal Sites with Potential Modern Regulation Releases and Risks

Table 6 below presents an overview of EPA's methodology for determining the five sites that warranted further investigation, and EPA's conclusions regarding whether the release events that occurred at those sites are representative of contemporary risks. The detail review assessed whether the releases identified at these sites occurred prior to the implementation of the current regulatory scheme. Based on this review, EPA concluded that notwithstanding the screens applied above, the environmental releases at three of the five removal sites were caused by one-time incidents (e.g., transformer fire and equipment failure) and the PRPs financed and performed the response actions to the satisfaction of EPA. Moreover, two of the these three incidents resulted in the release of PCB transformer oil, but the reported concentrations of the releases met the concentration limits for requirements under the Toxic Substances Control Act (TSCA 40 CFR 761) to apply.

For the remaining two sites, the detailed review identified the releases as resulting in potential environmental issues that occurred under modern regulations. Both cases involved long-term PCB contamination resulting from inappropriate handling and storage of PCB waste or material, potentially violating applicable TSCA regulations under 40 CFR 761. However, neither of these two sites required significant taxpayer expenditures under CERCLA, notwithstanding a designation government lead in SEMS. For example, according to EPA's expenditure data for English Station in Connecticut (an abandoned coal fired power plant, which operated from 1914 through 1992), while the taxpayer incurred an estimated cost of $17K, the PRP is also under a Partial Consent Order (PCO) with the state of Connecticut agreeing to spend $30 million to address PCB contamination potentially dating back to

1914. [6] Similarly, the taxpayer incurred an estimated cost of $350K for response at Commonwealth Utilities Corporation (CUC) site in Northern Mariana Island (a currently operating facility) after the government owned company indicated that they lacked the technical capacity to address the PCB contamination issues at the site. In this case EPA did not pursue an enforcement action to recover cost incurred, for reasons that included PRP's inability to pay.

Table 8 – Overview of EPA's Review of NAICS 2211 Removal Sites and Results of Detailed Review of Sites Potentially Representing Contemporary Risks

Total Universe of NAICS 2211 CERCLA Removal Action Sites	**No Further Consideration Required - Sites Not Representative of Contemporary Risk**	**Sites that Potentially Represent Contemporary Risks That May Warrant CERCLA FR Regulations**	
Total electric power generation, transmission, and distribution sites	*Sites screened out based on pre-1980 issues or PRP-lead actions*	*Sites with at least one release event that occurred under contemporary regulations, but with no record of taxpayer funded response (PRP led response)*	*Sites with at least one release event that occurred under contemporary regulations with some taxpayer funded response (fund or mixed led response)*
23	18	**3**	**2**

More information about the five sites subject to the detailed review is available in Appendix III of this document. Appendix III provides the operational history of each site, an overview of any regulatory and enforcement actions that occurred, and EPA's evaluation of the applicable regulations for the types of releases occurred at each site.

[6] State of Connecticut v. The United Illuminating Company Partial Consent Order Number COWSPCB 15-001.

Appendix I. List of Electric Power Generation, Transmission, and Distribution Non-NPL Sites

Row	EPA ID	Site Name	City	County	State
1	ALN000405418	GP BREWTON CAUSTIC SODA	BREWTON	ESCAMBIA	AL
2	ASD981621766	SATALA POWER PLANT	AMERICAN SAMOA		AS
3	CAN000906003	DUKE ENERGY TANK FIRE	MOSS LANDING	MONTEREY	CA
4	CTN000100945	ENGLISH STATION POWER PLANT	NEW HAVEN	NEW HAVEN	CT
5	GAN000410804	ROME POWER HOUSE ASBESTOS	ROME	FLOYD	GA
6	IDN001002463	THORCO TRANSFORMERS SITE	COEUR D'ALENE	KOOTENAI	ID
7	ILN000510868	MIDWEST GENERATION JOLIET STATION, DES PLAINES RIVER OIL SPILL	JOLIET	WILL	IL
8	INN000509242	ALLIS CHALMERS POWERHOUSE	LAPORTE	LA PORTE	IN
9	MA0001924166	SAWYER PASSWAY	FITCHBURG	WORCESTER	MA
10	MIN000507456	9125 W. JEFFERSON AVE. SITE	DETROIT	WAYNE	MI
11	MIN000510200	HIGHLAND PARK HOSPITAL	HIGHLAND PARK	WAYNE	MI
12	MPN000908795	CNMI CUC ISLEY	DAN DAN	NORTHERN ISLANDS	MP
13	MSN000410433	MISSISSIPPI POWER DANIEL PLANT	MOSS POINT	JACKSON	MS
14	MTN000800987	MILWAUKEE RAILROAD MONTANA SUBSTATIONS	TWO DOT	WHEATLAND	MT
15	NCD024668535	EDEN NC COAL ASH SPILL	EDEN	ROCKINGHAM	NC
16	NJC200400034	MICHELIN POWERHOUSE	MILLTOWN	MIDDLESEX	NJ
17	NYN000206540	LIBERTY ASBESTOS	LOCKPORT	NIAGARA	NY
18	OHN000505858	CPP POWER PLANT SITE	CLEVELAND	CUYAHOGA	OH
19	ORN001002838	MURRAY ROAD PGE SUBSTATION	BEAVERTON	WASHINGTON	OR
20	ORN001002919	PGE HOWARD STREET SUBSTATION FIRE	NEWBERG	YAMHILL	OR
21	TNN000410332	TVA KINGSTON FOSSIL PLANT FLY ASH	KINGSTON	ROANE	TN
22	TNN000410860	MEMPHIS UTILITY ACID SPILL	MEMPHIS	SHELBY	TN
23	WAN001002818	SEATTLE CITY LIGHT - BOTHELL	BOTHELL	KING	WA

Appendix II. List of Electric Power Generation, Transmission, and Distribution Sites with Fund or Mixed Response Lead Designation in SEMS

Row	EPA ID	Site Name	Action Lead
1	CTN000100945	ENGLISH STATION POWER PLANT	Fund
2	GAN000410804	ROME POWER HOUSE ASBESTOS	Fund
3	INN000509242	ALLIS CHALMERS POWERHOUSE	Fund
4	MA0001924166	SAWYER PASSWAY	Mixed
5	MIN000507456	9125 W. JEFFERSON AVE. SITE	Unknown
6	MIN000510200	HIGHLAND PARK HOSPITAL	Fund
7	MPN000908795	CNMI CUC ISLEY	Fund
8	MTN000800987	MILWAUKEE RAILROAD MONTANA SUBSTATIONS	Unknown
9	NJC200400034	MICHELIN POWERHOUSE	Mixed
10	NYN000206540	LIBERTY ASBESTOS	Fund
11	ORN001002838	MURRAY ROAD PGE SUBSTATION	Mixed
12	ORN001002919	PGE HOWARD STREET SUBSTATION FIRE	Mixed
13	WAN001002818	SEATTLE CITY LIGHT - BOTHELL	Mixed

Appendix III. Detailed Case Narratives of NAICS 2211 Removal Sites with Potential Modern Regulation Releases and Risk

EPA sought to identify examples of releases in the power generation industry that occurred under an environmental regulatory structure similar to today's and that required a taxpayer funded cleanup. EPA would use these examples to evaluate the current risk of release at NAICS 2211 facilities. As part of this effort, EPA developed the risk profile using power generation sites that experienced releases requiring assessments and/or removal actions, but that were not on the NPL. To identify this universe of power generation facilities, EPA used the Superfund Enterprise Management System (SEMS) database and queried for non-NPL sites. EPA further winnowed the results to NAICS 2211 facilities. This process resulted in 23 power generation facilities that experienced a release but that were not on the NPL. From these 23 facilities, EPA further screened out PRP funded assessments and actions, which left 13 facilities. Finally, EPA collected data from the 13 sites at which the government either fully or partially funded assessment or removal actions to determine if the releases that occurred were the result of legacy issues or if they occurred under modern conditions. This data collection process yielded 5 sites, which EPA designated for further investigation to determine if the releases at the sites were relevant to risks at currently operating power generation sites.

Those sites are: English Station Power Plant (CTN000100945); CNMI CUC Isley (MPN000908795); Murray Road PGE Substation (ORN001002838); PGE Howard Street Substation (ORN001002919); and Seattle City Light – Bothell (WAN001002818).

EPA collected additional data in order to develop release case narratives for each of these sites. In order to assess whether the releases at those sites are potentially indicative of the risk profile at currently operating, EPA then compared those care narratives with the regulations under which those sites were operating at the time of the releases.

As part of its rulemaking effort, EPA collected information about the implementation dates and contents of federal environmental and safety regulations relevant to power generation facilities. At each of the five sites listed above, EPA investigated the relevant federal environmental and safety regulations that were in place at the time they experienced a release.

EPA also reviewed state environmental and safety regulations relevant to power generation facilities. In order to focus its review, EPA selected a sample of states that comprised the 13 states with the highest number of coal-fired power plants that constitute over 50 percent of the coal-fired plants in the United States. The states for which EPA collected regulatory information are: Pennsylvania, Michigan, Indiana, Illinois, Missouri, Texas, Kentucky, Iowa, Ohio, Wisconsin, Florida, Minnesota, and North Carolina. The following five sites are not located in states that we evaluated individually; however, the standing federal policy at the time illuminates the implications and risks at electric power generation sites.

Further Analysis – Sites Potentially Relevant to an Evaluation of Risk at Currently Operating Sites

1) English Station Power Plant

Facility Name: English Station Power Plant
EPA Region/State: R1 – Connecticut
EPA ID: CTN000100945
Contamination Dates: PCB-contaminated waste oil released into a river on or near 9/15/2014
Operation Dates: 1929 – 1992
Response Action Lead: Government Led
Expenditures: $17,500 (approx.)

Site Background/Description:

The site consists of the now defunct English Station Cogeneration Plant building and surrounding property in New Haven, Connecticut. The site was an electric power generation and distribution facility. The source document describes the site as a cogeneration plant and does not provide further details about the type of power production conducted. The site is located near the Mill River.

In 2014, site glass broke on an above-ground storage tank (AST) located on the property. Approximately 1,500 gallons of polychlorinated biphenyl (PCB)-containing oil were released through this broken site glass into the adjacent Mill River. Other issues on site included an unknown number of drums containing unknown materials present in the building, asbestos containing materials throughout the building, and potential PCB oil contamination throughout the facility.

Regulatory Compliance/Action/Response:

On September 15, 2014, an NRC report alerted authorities of a release of an unknown petroleum substance into a catch basin. An Emergency Removal Assessment was conducted from September 15 to September 17, 2014. On September 16, 2014, EPA conducted a preliminary assessment at one of the buildings onsite and identified 50 to75 drums of unknown contents, some additional ASTs, open transformers with oil leaking onto the floor, and background levels of up to 22,000 ppm of PCBs. In addition, asbestos debris was identified outside of the building awaiting disposal.

The US Coast Guard Sector Long Island Sound FOSC retained FOSC responsibility for the emergency response phase. The USCG issued an order to the PRP, Bobby Shah of ASMAT Realty LLC/Evergreen Power LLC, to address imminent threats of release. At the time of the removal assessment Pollution Report (September 22, 2014), clean up at the site was under supervision of the CT DEEP and US Coast Guard and the site was under ongoing oversight by the CTDEEP compliance programs.

The only Superfund site document available is the Removal Assessment Pollution Report; no Removal Action documents, and therefore no data on removed media, are available.

Discussion – Applicable Federal Regulations and Ongoing Risk Profile:

The 2014 release of PCB-contaminated waste oil resulted from improper storage and disposal of PCB-contaminated oil in an abandoned AST. The Toxic Substances Control Act (TSCA), 40 CFR Part 761 (PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions), governs PCB handling and disposal. When site operations ceased in 1992, provision 761.60, implemented in 1979, was in effect and regulated the disposal of PCB materials. The evident abandonment of PCB-contaminated materials at the facility, such as transformers leaking oil onto the floor, indicates the facility owner did not comply with this regulation at the time of site operation cessation.

In 1998, Subpart D of 40 CFR Part 761, which regulates disposal and storage of PCB materials, underwent substantial revisions and additions. Provisions added at this time further governed how the facility owner should have cleaned up the site. For example, 40 CFR Part 761.79, promulgated on June 29, 1998, sets forth decontamination standards and procedures for PCB containers. 40 CFR Part 761.61 governs the cleanup and management of PCB waste generated as the result of PCB spills and outlines how the responsible party should have handled the 2014 release of PCB-contaminated oil. These regulations were last updated and amended in 2009, well before the spill in 2014.

The Resource Conservation and Recovery Act (RCRA) also regulates the disposal of liquid wastes containing PCBs. Subpart E of RCRA, at 40 CFR Part 268.50(f), requires that facilities that store liquid hazardous wastes containing PCBs in concentrations of 50 ppm or more meet storage and disposal regulations under TSCA. Further, RCRA requires that facilities remove, treat, or dispose of PCB waste within one year of the date when the facility placed the waste in storage. RCRA regulations with respect to the storage of PCB wastes were effective on July 8, 1987 (52 FR 25791). Thus, the RCRA storage regulations were in place at the time of site closure in 1992. The presence of PCB waste in storage tanks at the site for decades after site closure in 1992 and resulting in the spill in 2014 indicates that the site owner did not comply with those RCRA storage regulations.

In addition to the PCB waste, EPA also discovered abandoned asbestos debris at the site. The Occupational Safety and Health Administration (OSHA) has regulated the occupational exposure to asbestos since 1986 in 29 CFR Part 1910.1001 and 1926.1101. The TSCA addresses asbestos disposal, as well. Appendix D to Subpart E of 40 CFR Part 763: Transport and Disposal of Asbestos Waste, which went into effect on December 14, 1987 (52 FR 41897), outlines additional asbestos disposal requirements.

The National Emission Standards for Hazardous Air Pollutants (NESHAPs), which EPA promulgated under the authority of the Clean Air Act (CAA) beginning in 1973, include standards for asbestos. 40 CFR Part 61, Subpart M establishes air emissions standards for asbestos that prohibit the discharge of visible asbestos emissions and proscribe asbestos storage and disposal practices at manufacturing operations, at 40 CFR Part 61.150, and active waste disposal sites, at 40 CFR Part 61.155. The standards for both manufacturing and disposal sites went into effect in 1990.

This review demonstrates that modern environmental regulations applicable to both asbestos and PCB waste at the site were in place during site operations, at the time of site closure, and at the time of the release of PCB-contaminated oil and the discovery of asbestos containing materials at the site. EPA therefore concludes that this site's history of PCB waste and material mismanagement and non-compliance with contemporaneous regulations may be representative of current risk at electric power generation facilities (NACIS 2211). However, based on expenditure data obtained from Superfund's

Integrated Financial Management System (IFMS) database, the site did not require significant taxpayer expenditures (approximately $17,500) notwithstanding a designation of government lead response.

References:

- United States Environmental Protection Agency (U.S.EPA). 2014. Pollution/Situation Report: English Station. EPA Region I. September.
- Luther Turmelle, "Former English Station power plant in New Haven gets new owners," *New Haven Register*, January 7, 2019. Accessed March 1, 2019, at: https://www.nhregister.com/news/article/Former-English-Station-power-plant-in-New-Haven-13515913.php.

2) CNMI CUC Isley

Facility Name: CNMI CUC Isley
EPA Region/State: R9 – Northern Mariana Islands
EPA ID: MPN000908795
Contamination Dates: March 2008 to November 2011
Operation Dates: After 1993
Response Action Lead: Government Lead
Expenditures: $374,000 (Approx.)

Site Background/Description:

The site consists of the Commonwealth Utilities Corporation (CUC) Power Plant 3 facility at Isley Field in Dan Dan, Saipan, CNMI. The facility is classified as NAICS 221112, fossil fuel electric power generation, and the Secondary SEMS Industry is electric power generation and distribution. Power Plant 3 was constructed in 1993. The plant had ceased generating power as of September 2005.

In March 2008, CUC informed EPA of the presence of drums of transformer oil being stored at the site. On March 10, 2008, there were less than 300 drums stored at the Isley Field location. The drums were stored outside, subject to the weather and elements.

The EPA and CNMI Division of Environmental Quality (DEQ) conducted sampling of the drums in order to determine whether some of the drums contained polychlorinated biphenyls (PCBs). Analytical results indicated that 19 drums contained PCB concentrations at or above RCRA regulatory levels, and that seven of the drums had concentrations above TSCA regulatory levels. The highest concentration reported was 300 mg/kg PCBs.

Regulatory Compliance/Action/Response:

After many attempts to get CNMI CUC to address the PCB contaminated oil being stored at the Power Plant 3 facility, EPA and DEQ conducted an inspection of the facility on November 17, 2009. EPA and DEQ found that at least one of the PCB contaminated drums had failed and was spilling its contents onto the concrete slab at the facility.

The removal action took place in the context of a DEQ stipulated order against CUC. CUC did not have the expertise or resources to undertake the removal and requested that EPA conduct the removal. The first phase of the removal action focused on removal of drums containing PCB wastes. The second phase focused on removal of asphalt and soil contaminated with PCBs and removal of sludges in drains on the site, which were contaminated with heavy metals.

Discussion – Applicable Federal Regulations and Ongoing Risk Profile:

The Toxic Substances Control Act (TSCA) 40 CFR Part 761 (PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions) regulates the handling and disposal of PCBs. EPA implemented 40 CFR Part 761 in 1979. Under the TSCA, CUC was responsible for determining the concentration of PCBs

in the drums of transformer oil being stored on site. While CUC claimed that some sampling of the drums had occurred, CUC could not provide any results to EPA. EPA and DEQ testing indicated that seven of the drums on site contained PCB concentrations above TSCA regulatory levels.

CUC failed to manage the PCB wastes in compliance with the TSCA. Upon removing the PCB liquids from use, CUC was required to dispose of them in accordance with 40 CFR Part 761.60 or decontaminate them in accordance with 761.79. TSCA requires that facilities dispose of PCB waste within one year of the date when the facility placed the waste in storage. Additionally, TSCA 40 CFR 761.65 requires PCB items in storage to be checked for leaks at least once every 30 days and requires any leaked materials to be cleaned up immediately. Given that EPA identified the leak, CUC failed to properly monitor the PCB wastes and/or failed to properly respond to the leak.

The Resource Conservation and Recovery Act (RCRA) also regulates the disposal of liquid wastes containing PCBs. Subpart E of RCRA, at 40 CFR Part 268.50(f), requires that facilities that store liquid hazardous wastes containing PCBs in concentrations of 50 ppm or more meet storage and disposal regulations under TSCA. EPA's analysis of the drums that CUC stored at the site indicated that 19 of the drums contained liquid waste in excess of this threshold. Further, RCRA requires that facilities remove, treat, or dispose of PCB waste within one year of the date when the facility placed the waste in storage. RCRA regulations with respect to the storage of PCB wastes were effective on July 8, 1987 (52 FR 25791). Thus, the RCRA storage regulations were in place at the time of plant construction in 1993, at likely plant closure or cessation of operations in 2005, at the time that CUC notified EPA of the presence of transformer waste drums at the site in 2008, and at the time of EPA's site inspection in 2009. The presence of PCB waste in drums at the site for more than three years after apparent site closure indicates that the site owner did not comply with RCRA storage regulations.

This review demonstrates that modern environmental regulations applicable to PCB waste were in place at the time of the release of PCB-contaminated oil. The PRP was also not in compliance with the relevant regulations for such a release. EPA therefore concludes that this site's history of hazardous waste mismanagement and non-compliance with cotemporaneous regulations represents an example of current-day risks that may occur at electric power generation facilities (NAICS 2211).

It should be noted that in addition to the above removal case, additional evidence of mismanagement and environmental enforcement actions were identified during a separate review of data available within EPA's ECHO database. This added information suggests further compliance issues and financial concerns, which have resulted in this utility company being reorganized under formal receivership. Information on this case is separately available within the background document which provides a review of enforcement and compliance history for this sector.

References:

- United States Environmental Protection Agency (U.S.EPA). 2019. Enforcement, Court Settlements and Judgments in the Electric Power Generation, Transmission and Distribution Industry. May.

- United States Environmental Protection Agency (U.S.EPA). 2010. Action Memo: Request for a Time-Critical Removal Action at the Commonwealth of the Northern Mariana Islands (CNMI) Commonwealth Utilities Corporation (CUC) PCB Site. EPA Region 9. February.
- "CUC to transfer Power Plant 3 to Lower Base," *Saipan Tribune*, September 23, 2005. Accessed March 5, 2019 at: https://www.saipantribune.com/index.php/a4a893ff-1dfb-11e4-aedf-250bc8c9958e/.

Sites Not Relevant to an Evaluation of Risk at Currently Operating Sites

3) Murray Road PGE Substation

Facility Name: Murray Road PGE Substation
EPA Region/State: R10 – Oregon
EPA ID: ORN001002838
Contamination Dates: Transformer failure and fire on 5/17/2009
Operation Dates: Unknown
Response Action Lead: Mixed Lead

Site Background/Description:

A large residential/commercial utility distribution substation owned by Pacific Gas and Electric (PGE) in Beaverton, Oregon was the site of a transformer fire in 2009. The facility is classified in NAICS 221122 as an electric power distribution facility and is further classified as a manufacturing/processing/maintenance facility.

Prior to the fire, a large skid mount portable transformer had been brought to the site to temporarily replace the permanent transformers so that they could be serviced. Some time on May 17, 2009, the temporary transformer experienced a catastrophic failure and caught fire. Local fire authorities allowed the fire to burn out. Two nine-gallon station transformers burned on the skid trailer. Sample results for both transformers did not detect PCBs. An additional 3,120-gallon transformer had dielectric oil containing PCB at four ppm. An approximately 800-square foot area of packed gravel located downslope of the burn area was impacted by the dielectric oil. Capacitors located in the northeast corner of the station were intact and unaffected. A nearby creek was unimpacted.

Regulatory Compliance/Action/Response:

EPA met PGE's Environmental Services at the site approximately ten hours after the fire had been suppressed. PGE produced sample results for all three burned transformers. Results showed all three were non-PCB transformers under the Toxic Substances Control Act (TSCA). EPA inspected the nearby creek, capacitors, and the gravel areas impacted by the dielectric oil.

PGE Environmental Services told EPA it planned to excavate the contaminated gravel once the burned equipment was cool and safe to conduct work. EPA noted cleanup equipment at the site waiting to begin work. In the removal action pollution report filed at the time of the incident, EPA expressed confidence that PGE would clean the site. No additional Superfund documentation is available to indicate if EPA was further involved in the cleanup.

Discussion – Applicable Federal Regulations and Ongoing Risk Profile:

The Murray Road PGE Substation transformer fire and oil release does not qualify as a release of a hazardous substance. The EPA regulates oil spills separately from hazardous substance releases, and transformer oil is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 CFR Part 302, Designation, Reportable Quantities, and Notification. The EPA regulates PCB transformer oil under 40 CFR Part 761 (PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions). However, most provisions of 40 CFR Part 761 are applicable only to transformers containing oil with greater than 50 ppm PCB (40 CFR Part 761.1). None of the transformers involved in this incident met this criterion, and all were considered non-PCB transformers at the time of the fire.

The EPA regulates oil spills regardless of PCB contamination under 40 CFR 112 (Oil Pollution Prevention) and 40 CFR 110 (Discharge of Oil). However, these regulations are only applicable to oil spills that occur to navigable waters or adjoining shorelines, and therefore do not apply to the spill at the Murray Road PGE Substation, which did not affect any waters.

General modern emergency planning and response regulations applied to the Murray Road PGE Substation's operations at the time of the 2009 fire. For example, employers are required to have Emergency Action Plans (EAPs) under the Occupational Safety and Health Act (OSHA) (29 CFR Part 1910). EAPs must include procedures for reporting a fire or other emergencies, procedures for emergency evacuation, and other procedures (29 CFR Part 1910.38 Subpart E). If the Murray Road PGE Substation handles PCB transformers or other hazardous substances not involved in the May 17, 2009 fire, it is subject to additional emergency preparedness regulations under CERCLA (40 CFR Parts 300-399). These programs include CERCLA Emergency Planning and Notification (40 CFR Part 355), enacted in 1986, which requires disclosure of facility information to allow state and local authorities to develop and implement chemical emergency response plans, and 40 CFR Part 370, which set forth Material Safety Data Sheet inventory reporting requirements for hazardous materials, also enacted in 1986. All the above regulations were in place prior to the 2009 fire.

While the fire occurred in 2009, no regulations were identified to have been violated. No evidence suggests that the PRP failed to meet modern emergency planning and response regulations or guidance. Available Superfund documents also indicate PGE responded to the emergency in an appropriate and timely manner. In addition, Superfund's IFMS database revealed no taxpayer expenditures at this site. Since EPA expressed confidence in the PRP's cleanup response, this non-NPL removal case does not represent an example of risk within the electric power generation (NAICS 2211) sector. It also appears that the PRP took full responsibility for the cleanup, but further analysis is necessary to determine this with confidence.

References:

- United States Environmental Protection Agency (U.S.EPA). 2009. Initial and Final Murray Road PGE Substation Fire, Beaverton, Oregon. EPA Region 10. May.

4) PGE Howard Street Substation

Facility Name: PGE Howard Street Substation
EPA Region/State: R10 – Oregon
EPA ID: ORN001002919
Contamination Dates: The release occurred on February 19, 2011.
Operation Dates: After 1939
Response Action Lead: Mixed Lead
Expenditures: Unknown

Site Background/Description:

The site consists of a medium-sized electrical utility substation owned by Portland General Electric (PGE) in Newberg, OR. The substation is located across the street from the city police and fire department and a neighborhood park. The facility is classified as NAICS 221121, Electric Bulk Power Transmission and Control, and the Secondary SEMS Industry for this site is electric power generation and distribution.

At approximately 7:00 a.m. on February 19, 2011, the Howard Street PGE Substation experienced an equipment fire. A 275-gallon oil-filled circuit breaker failed, ignited, and sprayed oil into the air. Approximately 10 to 15 gallons of oil left the confines of the substation and coated the surrounding sidewalk, road, soil, and vegetation. According to a contemporaneous news report, "[m]any cars, porches, sidewalks, and Memorial Park adjacent to the substation were splattered or drenched with oil particles. Residents were naturally concerned and worried about their homes, neighborhood, and Memorial Park where their children play and walk their dogs". PGE sample results for the circuit breaker indicated 12 ppm polychlorinated biphenyls (PCB), which is classified as non-PCB equipment under TSCA.

Regulatory Compliance/Action/Response:

Prior to removal, 10 to 15 gallons of mineral oil with low levels of PCB covered an area approximately 200 feet wide by 100 feet long. The Newberg Fire Department responded immediately and secured the spill area but put no water on the fire. PGE crews spread sorbent material on the affected road and sidewalk, allowed it to stand for approximately an hour and then shoveled it up. None of the material reached surface water. An excavator and roll off boxes were brought to the site. Oiled soil was removed from around the substation and median strips. Crews also cut and cleared affected vegetation. PGE took responsibility for the cleanup and cooperated with EPA.

Discussion – Applicable Federal Regulations and Ongoing Risk Profile:

The Howard Street PGE Substation equipment fire and oil release does not qualify as a release of a hazardous substance. The EPA regulates oil spills separately from hazardous substance releases, and oil is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 40 CFR Part 302, Designation, Reportable Quantities, and Notification. The EPA regulates PCB contaminated oil under 40 CFR Part 761 (PCBs Manufacturing, Processing, Distribution in

Commerce, and Use Prohibitions). However, most provisions of 40 CFR Part 761 are applicable only to liquids containing greater than 50 ppm PCB (40 CFR Part 761.1). PGE sample results indicate that the circuit breaker involved in the incident contained 12 ppm PCB, and thus the circuit breaker was classified as non-PCB equipment at the time of the fire.

The EPA regulates oil spills regardless of PCB contamination under 40 CFR 112 (Oil Pollution Prevention) and 40 CFR 110 (Discharge of Oil). However, these regulations are only applicable to oil spills that occur to navigable waters or adjoining shorelines, and therefore do not apply to the spill at the Howard Street PGE Substation, which did not affect any waters.

General modern emergency planning and response regulations applied to the Howard Street Substation's operations at the time of the 2011 fire. For example, employers are required to have Emergency Action Plans ("EAPs") under the Occupational Safety and Health Act ("OSHA") (29 CFR Part 1910). EAPs must include procedures for reporting a fire or other emergencies, procedures for emergency evacuation, and other procedures (29 CFR Part 1910.38 Subpart E). If the Howard Street PGE Substation handles hazardous substances not involved in the February 2011 fire, it is subject to additional emergency preparedness regulations under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") Superfund, Emergency Planning, and Community Right-to-Know Programs (40 CFR Parts 300-399). These programs include CERCLA Emergency Planning and Notification (40 CFR Part 355), effective since 2008, which requires disclosure of facility information to allow state and local authorities to develop and implement chemical emergency response plans, and 40 CFR Part 370, which set forth Material Safety Data Sheet inventory reporting requirements for hazardous materials starting in 2008. These regulations were in place prior to the 2011 fire.

While public press documents indicated significant concerns regarding the release, sampling results revealed that the level of PCBs in the subject transformer were below the threshold levels necessary to trigger a number of PCB regulatory requirements. Available Superfund documents also indicate that PGE responded to the emergency in an appropriate and timely manner, notwithstanding a designation of mixed or government lead in SEMS, and that PGE was not in violation of any applicable regulations. These same source documents indicate that PGE took responsibility for cleanup of the release. In addition, Superfund's IFMS database revealed no taxpayer expenditures at this site. As a consequence of these findings, EPA does not consider this site to represent risk at electric power generation facilities (NAICS 2211).

References:

- United States Environmental Protection Agency (U.S.EPA). 2011. Pollution/Situation Report # 2 – Final Polrep PGE Howard St. Substation Fire, Lewberg, Oregon. EPA Region 10. February.
- Aubra Salt, "PCB Lever Report Arrives for Newberg after Substation Fire and Explosion," *The Oregon Herald*, March 5, 2011. Accessed March 21, 2019 at: http://www.oregonherald.com/oregon/localnews.cfm?id=402.
- City of Newberg, Oregon, Resolution Index for 1925 to 2014. Accessed March 21, 2019 at: https://www.newbergoregon.gov/sites/default/files/fileattachments/ordinance/5174/resolutio

n_index_list_1925_to_2014_updated_2015-1106.pdf;
https://www.newbergoregon.gov/ordinances/resolution-indices.

5) Seattle City Light – Bothell

Facility Name: Seattle City Light – Bothell
EPA Region/State: R10 – Washington
EPA ID: WAN001002818
Contamination Dates: The release of mercury occurred on September 19, 2008.
Operation Dates: Unknown
Response Action Lead: Mixed Lead
Expenditures: Unknown

Site Background/Description:

The site consists of the Seattle City Light (SCL) Bothell Electrical Substation in Bothell, WA. The facility is classified as NAICS 221121, Electric Bulk Power Transmission and Control, and the Secondary SEMS Industry for this site is electric power generation and distribution.

The release occurred on September 19, 2008, when the substation was testing a new connection to city water for the fire suppression system. The substation was preparing to switch over from an onsite water tower that was the source of water for a fire suppression system. The additional pressure ruptured an antiquated mercury manometer used for measuring water level in the water tower. The mercury and water flooded the control room and poured down conduit openings in the floor to the basement.

Regulatory Compliance/Action/Response:

EPA learned of the release six and a half weeks after it occurred. Most of the release had been cleaned up by the time of EPA's inspection. EPA considered three possible paths for mercury into the environment: (1) the mercury-contaminated water on the main floor that was mopped up and poured into a sink which drains to a septic system on-site; (2) the mercury-contaminated water in the basement that was directed into a floor drain located in the bottom landing of an outside stairwell which leads to a retention pond on-site; and (3) mercury which may have been tracked off site by workers involved in the initial response.

Discussion – Applicable Federal Regulations and Ongoing Risk Profile:

The Emergency Planning and Community Right to Know Act (EPCRA) established emergency release notification requirements through 40 CFR Part 355. 40 CFR Part 355 outlines requirements for facilities to provide information necessary for developing and implementing state and local emergency response plans, and requirements for emergency notification of chemical releases. The emergency release notifications requirements were established with the enactment of EPCRA in 1986. Under the EPCRA emergency release notification requirements, the reportable quantity for mercury is one pound (see 40 CFR Part 355.33 and 302.4). The emergency release notification provisions require that facilities immediately submit release information to relevant community emergency coordinators and state emergency response commissions.

EPCRA also established toxic chemical release reporting requirements through 40 CFR Part 372. 40 CFR Part 372 describes the requirements for the submission of information relating to the release of toxic chemicals, as defined by EPCRA. The reporting requirements for mercury went into effect on January 1, 1987 (see 40 CFR Part 372.65). Under the EPCRA toxic chemical release reporting requirements, the reportable quantity for mercury is ten pounds (see 40 CFR Part 372.28). Facilities must submit information on releases under the toxic chemical release reporting requirements through EPA's Toxic Release Inventory (TRI) each calendar year.

Although the amount of mercury estimated to have been released was 20 pounds, the release was not reported by SCL to the National Response Center or to Washington state authorities. The incident came to Washington Department of Ecology's attention when they were contacted by an investigative reporter who had been tipped off by an anonymous SCL employee.

The SCL release was not subject to EPCRA hazardous chemical reporting requirements at 40 CFR Part 370 because the reporting threshold for those requirements is 500 pounds.

Because mercury is a toxic chemical, the incident at the SCL site constituted a toxic chemical release and should have triggered the site's Emergency Action Plan (EAP). Employers are required to have EAPs under the Occupational Safety and Health Act (OSHA), implemented through 29 CFR Part 1910. The EAP regulations went into effect on December 11, 1980 (see 45 FR 60656 and 60714). EAPs must include procedures for reporting a fire or other emergencies, procedures for emergency evacuation, and other procedures (see 29 CFR Part 1910.38, Subpart E). EAPs do not include a notification or reporting requirement, and so it is unclear if SCL had an EAP in place that covered the release of mercury and, if so, if the site followed the EAP when the release occurred.

In 2012, EPA promulgated a significant new use rule (SNUR) under the TSCA that added the use of elemental mercury in barometers, manometers, hygrometers, and psychometers. The regulation requires manufacturers of new mercury manometers to notify EPA at least 90 days before commencing that activity. Thus, the new development and sale of similar mercury manometers is now regulated under the TSCA through the 2012 EPA rulemaking.

This Superfund document review demonstrates that modern environmental regulations applicable to mercury releases at the site were in place at the time of the release. The available documents also suggest the facility failed to report the release which may represent non-compliance with existing release reporting and emergency response regulations. However, available Superfund documents also indicate the facility responded to the emergency and superfund's IFMS database revealed no taxpayer expenditures at this site. While there are compliance issues, this non-NPL removal case does not represent an example of risk within the electric power generation facilities (NACIS 2211).

References:

- United States Environmental Protection Agency (U.S.EPA). 2008. Initial and Final POLREP Seattle City Light Mercury Response, Bothell Washington. EPA Region 10. November.
- Pollution Report #1, November 13, 2008.
- Federal Register No. 104, 77 FR 31728. Accessed March 21, 2019 at: https://www.govinfo.gov/app/details/FR-2012-05-30.