

OMB Control Number: 2040-XXXX
Approval Expires: 05/dd/2013

Plant ID: Insert Plant ID
Plant Name: Insert Plant Name



Steam Electric Questionnaire

PART H - NUCLEAR POWER GENERATION

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Plant ID: Insert Plant ID
Plant Name: Insert Plant Name

PART H. NUCLEAR POWER GENERATION

INSTRUCTIONS

Complete Part H of the questionnaire for your plant. As you are completing the electronic form, note the following: When you enter your plant name and plant ID on the Part H TOC tab, all name and ID fields throughout Part H will automatically populate. Refer to the overall questionnaire instructions, the glossary, and the acronym list for assistance with completing Part H.

Please provide all free response answers in the highlighted yellow areas. Throughout Part H, you may need to make copies of certain sections/questions. Instructions are provided throughout Part H regarding making copies. Note that process wastewater codes or wastewater treatment system names must be populated on the copied tab or section, located in the upper right corner under "Plant ID" and "Plant Name", in order to correlate the requested information with the process wastewater or wastewater treatment system.

Use the Part H Comments tab to do the following: provide additional information as requested in certain questions within Part H; indicate atypical data (e.g., if 2009 information is not representative of normal operations); and note methods used to make best engineering estimates in the event that exact data are not available.

Note: The following acronyms are used throughout Part H:

PWR - Pressurized water reactor

BWR - Boiling water reactor

Plant ID: Insert Plant ID
Plant Name: Insert Plant Name**Part: H****Section Title: 1. Nuclear Generating Unit Data****Instructions:** Complete Section 1 (Questions H1-1 through H1-3) for each nuclear electric generating unit that the plant operated during 2009. Provide all free response answers in the highlighted yellow areas.

- CBI?**
 Yes
- H1-1.** Did the plant operate one or more units using nuclear energy as the fuel source to generate electricity in 2009?
- Yes (Continue)
 No (Skip to next Questionnaire Part)
- CBI?**
 Yes
- H1-2.** Did the plant generate any *process wastewater* (with the exception of wastewater from service water treatment systems) during 2009 that is associated with the production of electricity from nuclear generating units? Examples include, but are not limited to, containment sump water and water generated from cooling system leaks or loss of coolant accidents (LOCA).
- Yes (Continue)
 No (Skip to next Questionnaire Part)
- CBI?**
 Yes
- H1-3.** In Table H-1, provide information for all *process wastewater* associated with the production of electricity from the nuclear electric generating units that the plant operated during 2009. Indicate the nuclear generating unit(s) that are associated with each process wastewater. [Check all boxes that apply.] If the process wastewater is associated with the entire plant, all nuclear units should be checked. If the plant generated a process wastewater that is not in the drop down menu, include the name and description of the process wastewater in the space provided and indicate the nuclear generating unit(s) that are associated with the process wastewater.

<p>NUC-35</p>	<p>Process Wastewater ▼ Nonradioactive/Radioactive ▼</p> <p>Other, specify: </p>	<p><input type="checkbox"/> SE Unit 1 <input type="checkbox"/> SE Unit 4 <input type="checkbox"/> SE Unit 7 <input type="checkbox"/> SE Unit 2 <input type="checkbox"/> SE Unit 5 <input type="checkbox"/> SE Unit 8 <input type="checkbox"/> SE Unit 3 <input type="checkbox"/> SE Unit 6 <input type="checkbox"/> SE Unit 9 <input type="checkbox"/> Other, specify: </p>
<p>NUC-36</p>	<p>Process Wastewater ▼ Nonradioactive/Radioactive ▼</p> <p>Other, specify: </p>	<p><input type="checkbox"/> SE Unit 1 <input type="checkbox"/> SE Unit 4 <input type="checkbox"/> SE Unit 7 <input type="checkbox"/> SE Unit 2 <input type="checkbox"/> SE Unit 5 <input type="checkbox"/> SE Unit 8 <input type="checkbox"/> SE Unit 3 <input type="checkbox"/> SE Unit 6 <input type="checkbox"/> SE Unit 9 <input type="checkbox"/> Other, specify: </p>

Plant ID: Insert Plant ID
 Plant Name: Insert Plant Name
 Process wastewater code: Process Wastewater Code ▼

Part: H
Section Title: 2. Process Wastewater Generation

Instructions: Complete Section 2 (Questions H2-1 and H2-2) for each *process wastewater* generated on site during 2009 that is associated with the operation of the nuclear generating units. Please provide all free response answers in the highlighted yellow areas.

Make a copy of Section 2 for each type of process wastewater generated in 2009 and previously identified in Table H-1 using the "Copy Section 2" button below. Enter the process wastewater code from Table H-1 in the space provided above.

Copy Section 2

CBI?

Yes

H2-1. Indicate in Table H-2 if the *process wastewater* flow is continuous or not continuous. For process wastewater with a continuous flow, indicate the flow rate, typical volume generated annually, and duration for the process wastewater that was generated in 2009. For process wastewater without a continuous flow, indicate the typical flow rate, typical volume generated annually in gallons, duration, and frequency with which the process wastewater is generated.

Table H-2. Process Wastewater Flows

Process Wastewater Flow	Flow Rate (gpm)	Typical Volume Generated Annually (gallons)	Typical Duration		Typical Frequency (e.g., 1 time every 3 years)
<input type="radio"/> Continuous				hpd dpy	
<input type="radio"/> Not Continuous				hpd dpy	time(s) every year(s)

CBI?

Yes

H2-2. Indicate how the untreated process wastewater is handled. If recycled, indicate to which process the process wastewater is recycled. [Check all boxes that apply.]

Immediately recycled back to a plant process. Please describe how the process wastewater is reused

In cooling towers

As reactor coolant (BWR)

As primary coolant (PWR)

As secondary coolant (PWR)

Other specify:

[Redacted]

Discharged to surface water following on-site treatment, including those located on non-adjointing property.

Please provide the NPDES permitted outfall number (from Part A Section 2.2)

[Redacted]

Discharged to surface water untreated. Please provide NPDES permitted outfall number (from Part A Section 2.2)

[Redacted]

Transferred to publicly or privately owned treatment works

Transported to an offsite vendor waste processor

Transported to approved licensed burial ground

Other, explain:

[Redacted]

CBI?

Yes

H3-4. Complete a row in Table H-3 for each treatment technology used in this wastewater treatment system. If the technology is not listed, select other and identify it separately in the yellow box provided. Indicate the pollutants targeted for removal for each wastewater treatment technology. [Check all boxes that apply.] If you check "metals" or "other" specify the type of metal or type of other pollutant in the yellow boxes provided. Separate multiple entries with commas. Of the pollutants identified for each treatment technology, indicate up to three effluent limitations that drive/will drive the operation of this wastewater treatment technology. Provide the pollutant, the limitation, and the unit (mg/L, ug/L, or µCi/mL).

Table H-3. Characteristics of Wastewater Treatment Technologies Present in the Wastewater Treatment System

Wastewater Treatment Technology	Pollutants Targeted for Removal by the Technology	Which Effluent Limitation Drives/Will Drive the Operation of the Technology		
		Pollutant	Limitation	Unit
Wastewater Treatment Technology ▼	<input type="checkbox"/> Chlorine or other oxidizing agents			
	<input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite)			
	<input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron			Units ▼
	<input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
Other, specify (below):	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90			Units ▼
	<input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137			Units ▼
	<input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides			Units ▼
	<input type="checkbox"/> Metals, specify: _____			
	<input type="checkbox"/> Other , specify: _____			
Wastewater Treatment Technology ▼	<input type="checkbox"/> Chlorine or other oxidizing agents			
	<input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite)			
	<input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron			Units ▼
	<input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
Other, specify (below):	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90			Units ▼
	<input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137			Units ▼
	<input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides			Units ▼
	<input type="checkbox"/> Metals, specify: _____			
	<input type="checkbox"/> Other , specify: _____			

<p>Wastewater Treatment Technology ▼</p>	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
<p>Other, specify (below):</p>	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼
<p>Wastewater Treatment Technology ▼</p>	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
<p>Other, specify (below):</p>	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼
<p>Wastewater Treatment Technology ▼</p>	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
<p>Other, specify (below):</p>	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼

Wastewater Treatment Technology ▼	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
Other, specify (below): _____ _____	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼
Wastewater Treatment Technology ▼	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
Other, specify (below): _____ _____	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼
Wastewater Treatment Technology ▼	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium			Units ▼
Other, specify (below): _____ _____	<input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____			Units ▼

CBI?

Yes

H3-5. Is the plant currently constructing/installing or planning to begin constructing/installing by December 31, 2020 any additional treatment technologies not mentioned in question H3-4 to the wastewater treatment system? If so, indicate in Table H-4 below the type of technology and the pollutants the technology will target. [Check all boxes that apply.] If you check "metals" or "other" specify the type of metal or type of other pollutant in the yellow boxes provided. Separate multiple entries with commas.

Table H-4. Characteristics of Planned Wastewater Treatment Technologies in the Wastewater Treatment System

Wastewater Treatment Technology	Pollutants Targeted for Removal by the Technology
Wastewater Treatment Technology ▼ Other, specify (below): <div style="background-color: yellow; height: 15px; width: 100%;"></div>	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium <input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: <div style="background-color: yellow; width: 100px; height: 15px;"></div> <input type="checkbox"/> Other , specify: <div style="background-color: yellow; width: 100px; height: 15px;"></div>
Wastewater Treatment Technology ▼ Other, specify (below): <div style="background-color: yellow; height: 15px; width: 100%;"></div>	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium <input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: <div style="background-color: yellow; width: 100px; height: 15px;"></div> <input type="checkbox"/> Other , specify: <div style="background-color: yellow; width: 100px; height: 15px;"></div>

Wastewater Treatment Technology ▼ Other, specify (below): _____	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium <input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____
Wastewater Treatment Technology ▼ Other, specify (below): _____	<input type="checkbox"/> Chlorine or other oxidizing agents <input type="checkbox"/> Nitrogen compounds (ammonia, nitrate, nitrite) <input type="checkbox"/> Carbohydrazine <input type="checkbox"/> Boron <input type="checkbox"/> Hydrazine <input type="checkbox"/> Tritium <input type="checkbox"/> Organic acids <input type="checkbox"/> Strontium-90 <input type="checkbox"/> TSS <input type="checkbox"/> Cesium-137 <input type="checkbox"/> Oil and grease <input type="checkbox"/> Other Radionuclides <input type="checkbox"/> Metals, specify: _____ <input type="checkbox"/> Other , specify: _____

CBI?

Yes

H3-6. What is the ultimate destination of the treated process wastewater from this wastewater treatment system? If recycled, indicate how the treated process wastewater is recycled. [Check all boxes that apply].

Recycled back to a plant process. Please describe how the treated process wastewater is reused

In cooling towers

As reactor coolant (BWR)

As primary coolant (PWR)

As secondary coolant (PWR)

Other specify: _____

Discharged to surface water following on-site treatment, including those located on non-adjointing property.

Please provide the NPDES permitted outfall number (from Part A Section 2.2) _____

Transferred to publicly or privately owned treatment works

Transported to an offsite vendor waste processor

Transported to approved licensed burial ground

Other, explain: _____

CBI?

Yes

H3-7. If you indicated in question H3-6 that the ultimate destination of the treated process wastewater was to recycle part of it back to the plant, but not all of it, indicate the typical and maximum flow rates during 2009 for the recycled part of the treated process wastewater. In addition, provide the duration and frequency of the effluent transfers from the wastewater treatment system in 2009 for the recycled portion of the treated process wastewater. If the flow rate in 2009 is not typical of previous years, please note this in the "Part H Comments" tab at the end of part.

_____ Typical flow rate in 2009, gpm

_____ Maximum flow rate in 2009, gpm

_____ Duration of effluent transfers from treatment system in 2009, hpd

_____ Frequency of effluent transfers from treatment system in 2009, dpy

Plant ID: Insert Plant ID
 Plant Name: Insert Plant Name

Part: H
Section Title: Part H Comments

Instructions: Cross reference your comments by question number and indicate the confidential status of your comment by checking the box next to "Yes" under "CBI?" (Confidential Business Information).

Question Number	Comment
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	

CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	
CBI? <input type="checkbox"/> Yes	

Part H Drop Downs

Process Wastewater
Process Wastewater
Select
Auxiliary building sump/drain wastewater
Boiler blowdown
Boiler metal cleaning waste
Chemical and volume control system (CVCS) purge (PWR)
Condensate clean-up system purge (PWR)
Containment/drywell building sump/drain wastewater
Contaminated stormwater
Filter backwash
Ion exchange wastewater
Laboratory drain wastewater
Laundry wastewater
Leachate
Leaks from primary coolant system (PWR)
Leaks from radiological waste treatment system(s)
Leaks from reactor coolant system (BWR)
Loss of coolant accidents
Personnel and equipment decontamination wastewater
Primary coolant purge (PWR)
Reactor coolant purge (BWR)
Reactor water clean-up system purge (BWR)
Reverse osmosis reject water
Sample station drain wastewater
Secondary coolant purge (PWR)
Solidification process wastewater
Steam turbine cleaning washwater
Turbine building floor drain wastewater
Yard drain wastewater
Other (specify name and description)

Process Wastewater Code
Process Wastewater Code
Select
NUC-1
NUC-2
NUC-3
NUC-4
NUC-5
NUC-6
NUC-7
NUC-8
NUC-9
NUC-10
NUC-11
NUC-12
NUC-13
NUC-14
NUC-15
NUC-16
NUC-17
NUC-18
NUC-19
NUC-20
NUC-21
NUC-22
NUC-23
NUC-24
NUC-25
NUC-26
NUC-27
NUC-28
NUC-29
NUC-30
NUC-31
NUC-32
NUC-33
NUC-34
NUC-35
NUC-36

Nonradioactive/Radioactive
Nonradioactive/Radioactive
Select
Nonradioactive
Radioactive

Units
Units
Select
mg/L
ug/L
µCi/mL

Wastewater Treatment Technology
Wastewater Treatment Technology
Select
Aerobic biological reactor
Anaerobic biological reactor
Centrifugation
Chemical precipitation/flocculation
Constructed wetlands
Cross flow filtration
Degasification
Dechlorination
Evaporation
Hollow fiber filtration
Ion exchange
Ion exchange membrane
Ion-specific filtration
Neutralization
Oil/water separator
Oil skimming
Reverse osmosis
Settling pond
Settling tank
Slow sand filter
Specially-prepared activated carbon
Super absorbent polymers
Temporary storage for radionuclide decay
Ultrafiltration
Wet oxidation
Other specify