

Job Planning Package [Click the ? for online help](#)

Service Request # S435635	Facility: EMSL	Location: Entire	Funding WP: F08104 (Engineering Only)
Request Subject:	EMSL FP Waterflow Testing		
Description:	Prepare HFD test package and perform quarterly sprinkler system waterflow testing.		
Justification:			
Systems Affected:	Alarms-Fire Alarm, Water-Fire Protection		

JPP Type, Hold Points and Comments

UseCategory	Mandatory
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Basis for Planning

Special Instructions:	This form is used to identify hazards, associated mitigation actions (in addition to those contained in the EMSL Lab Handbook for this space) and provide additional information and/or sequential work steps necessary to complete this task. All staff involved in this task are to completely review this checklist prior to performing any work. If there are any questions immediately contact your Supervisor or the Building Manager. If an activity cannot be performed as required by this checklist, secure the activity and report to your supervisor.
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Work

Operating Requirements to communicate to Contractor	Yes	Specify Requirements	Test Personnel to be escorted by Building Power Operators during performance of testing.
Other Design Basis Documents:	Yes		
Specific Design Information:	H-3-302162, H-3-302164, H-3-302165 and H-3-302167 through H-3-302170		

Work to be Performed By:	Other Plant Forces		
Authorization for Shop/Field Work:	Field Work	Authorized By:	User Facilities Core Team

Work Description	Other	Testing will require outages and must be approved and scheduled through the EMSL Building Manager.
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Lock and Tag Requirements

Instructions:

Permits and Plans

Outage Permit

Job Site Prep

Documented Pre-job Meeting	Yes	
Procedures	Yes	HFD Operating Procedure HFD-EMSL-PYRO-MXL.

Personnel Requirements

Special Training Requirements	Yes	EMSL Orientation
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Job Hazards and Control Methods

Hazards:

Control Methods: Outage Permit Required

Work Activity

Step Number	Define Work Activity
1	Inform City of Richland Fire Department, as responding agency, per HFD Operating Procedure HFD-EMSL-PYRO-MXL.

2	Notify EMSL Control Room staff (376-5506) and lobby staff (372-2567) of testing to be conducted. Inform lobby staff to place testing sign over RCC-1 in lobby.
3	Place EMSL Fire Alarm in test configuration per attached EMSL Fire Alarm System Configuration Model for Maintenance/Testing. Notify EMSL Building Manager or Point-of-Contact of any discovered discrepancies from test procedure immediately.
4	Check each drain location outside building to assure splash blocks are properly positioned under drain connections. Tests for each riser may be performed in any order, provided that all procedure steps for any riser are completed prior to proceeding to next riser.
5	Riser 1: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves (2), and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet. Confirm with EMSL kitchen staff that operations have not been affected. If kitchen operations have been affected contact the Building Manager or POC. Restart excess pressure pump and verify shut-off at 100-120 psig.
6	Riser 2: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves (2), and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet. Confirm with POC that computer operations have not been affected. Restart excess pressure pump and verify shut-off at 120-140 psig.
7	Riser 3: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves, and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory

	performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet.
8	Dry Riser 4: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Conduct a water flow alarm test by opening (fully) the alarm test valve until a system fire alarm is confirmed. Verify satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Verify that alarm message on provided data sheet was received. Record the time to alarm and any remarks on the provided data sheet.
9	Riser 5: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves, and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet.
10	Riser 6: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves, and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet.
11	Riser 7: Conduct a riser flow pressure test by first verifying supply pressure is normal (55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves, and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet.
	Riser 8: Conduct a riser flow pressure test by first verifying supply pressure is normal

12	(55-90 psig) and main drain discharge is clear of personnel and equipment. Open fully the main drain valve and note the residual (flow) pressure indicated on the supply side pressure gauge and close the valve. Record this value on provided data sheet. Note if residual pressure is less than 45 psig contact the Building Manager or POC. Review EMSL Water Flow Test Data Sheet to determine the location of inspector's test valves, and message for expected alarms. Conduct a water flow alarm test by verifying the discharge area is clear of personnel and equipment and splash blocks are properly positioned. Open (fully) the inspectors test valve, carefully timing the duration until a system fire alarm is confirmed (maximum 90 seconds) and noting satisfactory performance of water motor alarm. Close inspectors test valve after alarm is verified. Record the time to alarm and any remarks on the provided data sheet.
13	Return building to operational status by following procedure outlined in EMSL Fire Alarm System Configuration Model for Maintenance/Testing. Verify with Point-of-Contact that system is fully operational and returned to service.

Approvals

Building Manager Pete Rojas Date: 9-6-00
 Facility Project Manager [Signature] Date: 9/6/00
 Safety: Fire [Signature] Date: 9/7/00
 Safety: Industrial Hygiene [Signature] Date: 9/6/00
 Work Control Specialist [Signature] Date: 9/6/00

Prepare for Printing (short version)	Create Sub-Request	Create Planning Checklist	Take Control of Service Request	Edit
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Service Request

Fields denoted with a * symbol must be filled in. Click the for Online Help.

Request Number	S421488	✓
Requester Name *	Brawn, David R	
Requester E-mail Address *	david.brawn@pnl.gov	✓
Requester Phone Number *	509/372-2409	
Request Subject *	Design and Install Heat Tape and Insulation on Stack Sampling Piping	
Request Type *	Facility Modification	✓
Building where problem is or product will be used *	EMSL	✓
Room within Building *	Roof above EMSL 3553	✓
Request Secondary Locations	3553	✓
Request Description	Design and install Heat Tape and insulation on primary sample tube of stack air sampling system for radioisotope exhaust system. Example design has been provided by Effluent Monitoring that can be used as an example of what is required.	
Justification (for major maintenance and all modifications only). Include impacts if request not accomplished.	Required by Effluent Monitoring	
SSC Category	Don't Know	
Funding for this Request (If you specify a cost account, a new Work Package Number will be generated automatically for this request)	Work Package #: R10901 or Cost Account: M64N	✓
Needed by Date * (mm/dd/yyyy or mm-dd-yyyy)	02/11/2000	

Associated Project

Request Submit Date	01/07/2000
Request Status	Perform Requested Engineering or Design/Drafting
Request Status Date	01/07/2000 11:37:16 AM
Reason for Rejection or Cancellation of SR	
Comments (optional)	Design on WP F08104

Request Triage Info

Service Provider Comment	
Triage Request Type	R&D Support -- Engineering
Related Request Type	None
Related Request Number	No Related Requests
Systems Affected	Hvac-Heating And Ventilation Exhaust Air, Others-Stack Monitoring
Results of Additional Review	
Current Holder of this Service Request:	Brawn, David R

Facility Operations Info

(Click here  for Help)

Project/Resource Manager	QCR?	Safety Class
Rojas, Pete	No	No
Work Control Specialist	Priority	Primary Craft (optional)
Brawn, David R	4	Sub Contractor

Facility Engineering & Designing/Drafting - S421488

Facility Engineer Assigned	Burris, Jack
Attach File:	

▶ Audit Trail:

▶ Document History

Job Planning Package [Click the ? for online help](#)

Service Request # S421488	Facility: EMSL	Location: Roof above EMSL 3553	Funding WP: R10901
Request Subject:	Design and Install Heat Tape and Insulation on Stack Sampling Piping		
Description:	Design and install Heat Tape and insulation on primary sample tube of stack air sampling system for radioisotope exhaust system. Example design has been provided by Effluent Monitoring that can be used as an example of what is required and is included and used as reference.		
Justification:	Required by Effluent Monitoring		
Systems Affected:	Hvac-Heating And Ventilation Exhaust Air, Others-Stack Monitoring		

JPP Type, Hold Points and Comments

UseCategory	Information
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Basis for Planning

Special Instructions:	This form is used to identify hazards, associated mitigation actions (in addition to those contained in the EMSL Lab Handbook for this space) and provide additional information and/or sequential work steps necessary to complete this task. All staff involved in this task are to completely review this checklist prior to performing any work. If there are any questions immediately contact your Supervisor or the Building Manager.
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Work

Other Design Basis Documents:	Yes		
Specific Design Information:	Facility Modification Permit S412488-01-0-01-00		
Work to be Performed By:	Maintenance Services		
Authorization for Shop/Field Work:	Field Work	Authorized By:	User Facilities Core Team

Lock and Tag Requirements

Personal, Controlling Organization, Written Instructions	Instructions: Apply controlling organization locks and tags to panel GL13, circuit #9, panel GL12, circuit 31 and panel EDL31, circuit 8, prior to starting work. Each person working within the electrical enclosures shall apply personal protection lock and tag over the CO lock-out and perform zero energy check. Remove locks and tags as defined in work steps below.
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Permits and Plans

Facility Modification Permit, Outage Permit

Job Site Prep

Documented Pre-job Meeting	Yes
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Personnel Requirements

Special Training Requirements	Yes	Electrical Worker Safety Trng, EMSL Orientation, Fall Protection
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Job Hazards and Control Methods

Hazards: Exp/energ. elec >50v

Control Methods: Outage Permit Required; Lock and tag

Work Activity

Step Number	Define Work Activity
1	This project installs heat trace and insulation for the stack sampling line on the EMSL Radioisotope exhaust stack. This was overlooked during EMSL construction and is required for accurate sampling, if EMSL is ever to handle dispersible radioisotopes. The stack sample pumps are also being transfer from normal power to standby power in this modification.
2	An outage permit is required for taking the stack sampling system off-line, even though it may not currently be in service. It is required to notify effluent monitoring through the building engineer prior to starting this portion of the job.
3	Apply locks and tags as specified above.
4	Disconnect existing circuit GL12-31 from sampling pump enclosure at termination block at the top of the panel and remove the wires back to the receptacle on the north wall of EMSL 3553.
5	Extend circuit EDL21-8 from receptacle on south wall of EMSL 3553 to sampling pump enclosure. Reuse existing conduit and junction boxes where possible. Install 2#12 & 1 #12 GND in 3/4 EMT. Connect to termination block at the top of the enclosure where the wires were previously removed.
6	Remove locks and tags from panel EDL21, circuit 8. Have power operator verify proper operation of pumping system on new power source.
7	Label power circuits in pumping enclosure with panel and circuit number. Label all junction boxes in this conduit run with the same information.
8	Install unistrut support frame ^{on JEB} inside of decorative grid at approximately 3'-0" above roof deck and install new receptacle, toggle switch and heat trace cable on roof. Install 1/2" EMT from existing receptacle through existing penetration and to new receptacle, toggle switch and heat trace cable on roof. All parts shall be as shown on the typical drawing for these installations and shall be installed per manufacturer's written instructions and the general notes on this drawing.
9	Install 2#12 & 1 #12 GND from panel GL13, circuit #9 to new roof mounted equipment and make connections as shown. Remove the locks and tags from panel GL13, circuit #9 and GL12, circuit 31 and verify heat trace operation.
10	Label all junction boxes and devices with panel and circuit number.
11	Insulate sampling tube with specified insulation.

Approvals

Building Manager Pete Rojas Date: 6-1-00
 Effluent Management David Douglas Date: 6-2-00
 Facility Project Manager [Signature] Date: 6/1/00
 Safety: Fire [Signature] Date: 6-2-00
 Safety: Industrial Hygiene Marty Moran Date: 6/1/00
 Work Control Specialist [Signature] Date: 6/2/00