

August 15, 2014

Raymond McKinley, Jr.  
Chief – Reactor Projects Branch #5  
U.S. Nuclear Regulatory Commission  
2100 Renaissance Blvd., Suite 100  
King of Prussia, PA 19406-2713

Via email to [Raymond.McKinley@nrc.gov](mailto:Raymond.McKinley@nrc.gov)

Dear Mr. McKinley:

Priscilla Star called my attention to a lengthening string of reports about radiation monitors being out of service at the Millstone nuclear plant. She pointed out, and I confirmed, that such radiation monitor outages are being reported more frequently at Millstone than at other nuclear plants in the United States. Priscilla also assisted me in developing the questions below. She scheduled a meeting for August 21, 2014, at Millstone with Mr. Ken Holt of Dominion's media relations department to discuss her concerns. Priscilla contacted the NRC's Office of Public Affairs and requested that someone from the NRC also attend this meeting, but the NRC denied her request.

**Q-1: Is Millstone experiencing a higher rate of radiation monitors being out of service than typical U.S. nuclear power reactors, or is there something different about this plant's licensing basis that results in more reported outages?**

On Millstone Unit 2, the normal stack radiation monitor (RM-8169) has been reported out of service at least twice during the past year. The high range stack radiation monitor (RM-8168) has been reported out of service at least four times during the past year. The enclosure to this letter includes a schematic of the gaseous effluent pathways for Millstone Unit 2 along with the Event Notifications to the NRC about out of service radiation monitors for those release paths.

RM-8169 appears to be governed by the Radiological Effluent Monitoring and Off-site Dose Calculation Manual (REMOCM), specifically Table IV.C.-3 (also provided in the enclosure). Actions B, C, and E apply when RM-8169 is out of service. Collectively, these Actions require flow rates to be estimated every 5 hours, grab samples taken every 12 hours, and auxiliary sampling equipment placed in service within 12 hours.

**Q-2: Did workers at Millstone implement the appropriate compensatory measures within the applicable times as mandated by these actions?**

NRC inspection report 05000336/2013003 and 05000423/2013003 dated August 6, 2013 (ML13219A187) included a Severity Level IV violation of federal regulations related to RM-8169. The following description of the violation is extracted from the NRC's inspection report:

Description. On April 16, Dominion performed routine surveillance SP 2815, "Main Station Stack Wide-range Gaseous Radiation Monitor sampling for Iodine and Particulates," and discovered P-187, the bypass pump, not running. This pump is necessary to ensure isokinetic sample flow is maintained to support operability of RM-8169, the main stack radiation monitoring system. RM-8169 is used as the sole criterion for assessment of Unit 2 Emergency Action Levels (EALs) OG1, OS1, OA1, and OU1 for declaration of the general emergency, site area emergency, alert, and notification of unusual event classification levels for offsite releases, respectively. There are no compensatory measures to mitigate the degradation or loss of emergency response function if the monitor is inoperable.

**Q-3: Since "*There are no compensatory measures to mitigate the degradation or loss of emergency response function if the monitor is inoperable,*" is the NRC comfortable with the recurring out of service periods for this unique safety component? If so, why? If not, what measures will the NRC employ to compel greater reliability of this function?**

RM-8168 is governed by the technical specifications, specifically Table 3.3-6 (provided in the enclosure). Action 17 applies when RM-8168 is out of service and requires an alternate monitoring method be implemented within 72 hours. It is not clear from the publicly available reports whether the monitor outages lasted longer than 72 hours.

**Q-4: How long did the RM-8168 out of service periods last?**

**Q-5: For each out of service period lasting longer than 72 hours, was an appropriate alternate monitoring method placed in service in time?**

On Millstone Unit 3, the normal stack radiation monitor (3HVR\*RE10B) has been reported out of service at least twice during the past year. The secondary containment ventilation radiation monitor (3HVR\*19B) has been reported out of service at least once during the past year. The enclosure to this letter includes a schematic of the gaseous effluent pathways for Millstone Unit 3 along with the Event Notifications to the NRC about out of service radiation monitors for those release paths.

3HVR\*10B and 3HVR\*19B both appear to be governed by the Radiological Effluent Monitoring and Off-site Dose Calculation Manual (REMDCM), specifically Table V.C.-3 (also provided in the enclosure). Actions A, B, and C apply when either radiation monitor is out of service. Collectively, these Actions require flow rates to be estimated every 5 hours, grab samples taken every 12 hours, and auxiliary sampling equipment placed in service within 12 hours.

**Q-6: Did workers at Millstone implement the appropriate compensatory measures within the applicable times as mandated by these actions?**

By letter dated April 24, 2014 (ML13128A147), Dominion Nuclear Connecticut, Inc. submitted to the NRC the radioactive effluent release report for 2012. It contained this summary of gaseous releases to the atmosphere during 2012:

### 2.1.3 Airborne Batch Release Statistics

#### MPS1 – None

<b>MPS2</b>	Cmt Purges	Cmt Vents	WGDT
Number of Batches	5	62	32
Total Time (min)	2410	9680	12930
Maximum Time (min)	1000	221	1000
Average Time (min)	483	156	404
Minimum Time (min)	120	42	24

<b>MPS3</b>	Cmt Purges	Cmt Vents*	Cmt Drawdowns
Number of Batches	0	~350	0
Total Time (min)	NA	*	NA
Maximum Time (min)	NA	*	NA
Average Time (min)	NA	*	NA
Minimum Time (min)	NA	*	NA

\* – 2-3 hrs per Vent

This summary shows nearly daily containment venting from Millstone Unit 3 and more than weekly containment venting from Unit 2. If such performance was sustained during 2013, it suggests that it is likely that batches could have been released at the same time an effluent monitor was out of service. A search for the submittal from Dominion for radioactive releases during 2013 was not located in NRC's ADAMS, but even its discovery could not have answered this question:

#### **Q-7: Are batch releases from Millstone Unit 2 or Millstone 3 ever conducted with an effluent radiation monitor out of service?**

If the answer to any question is contained within publicly available documents, all I'd expect is a pointer to the document(s). Otherwise, I look forward to the NRC's answers.

Sincerely,



David Lochbaum  
 Director, Nuclear Safety Project  
 Union of Concerned Scientists  
 PO Box 15316  
 Chattanooga, TN 37415  
 423-468-9272, office  
[dlochbaum@ucsusa.org](mailto:dlochbaum@ucsusa.org)

Enclosure: as stated

Distribution:

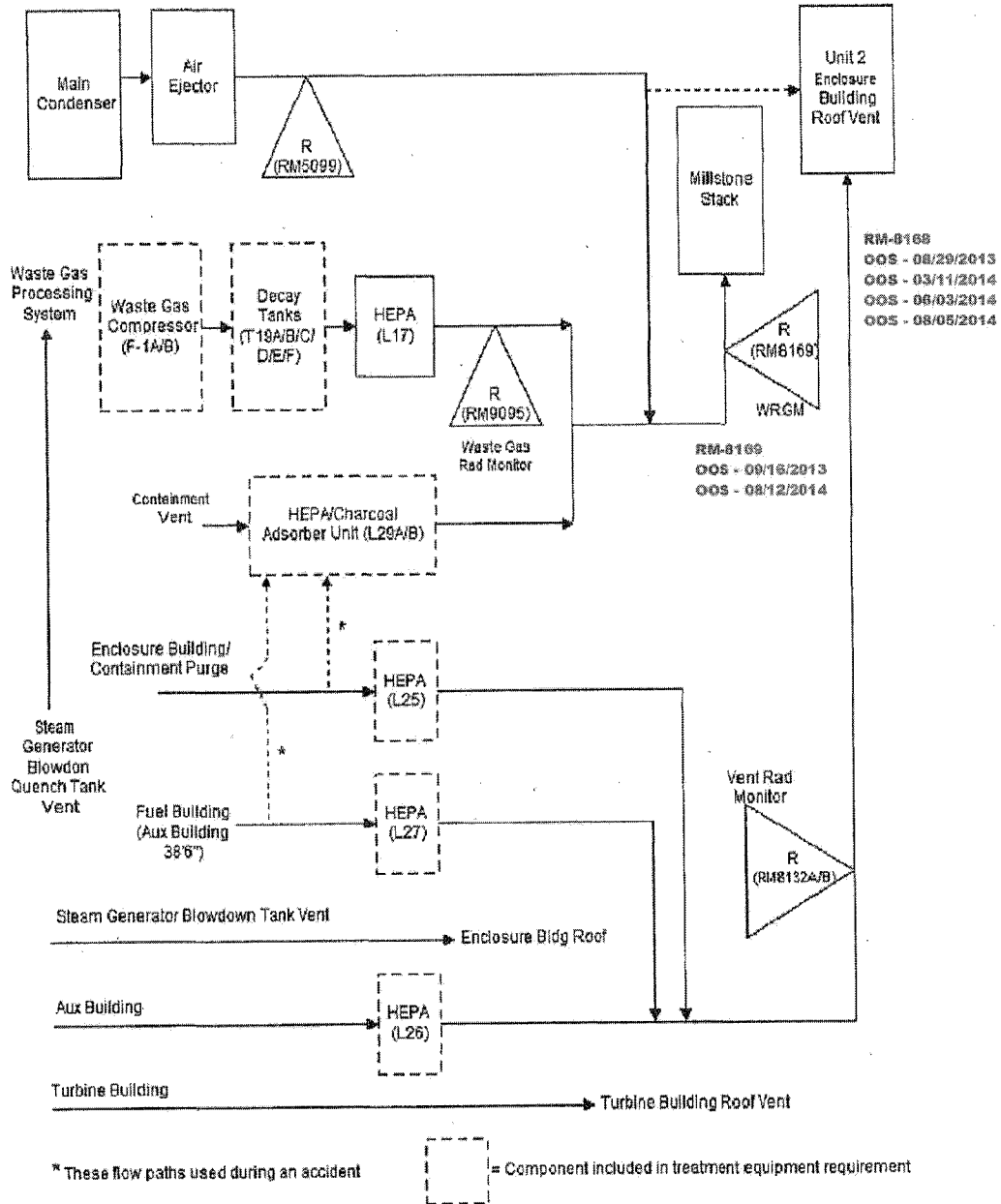
Priscilla Star

Ken Holt via email to [Kenneth.A.Holt@dom.com](mailto:Kenneth.A.Holt@dom.com)

Richard Zuercher via email to [Richard.Zuercher@dom.com](mailto:Richard.Zuercher@dom.com)

Diane Screnci via email to [Diane.Screnci@nrc.gov](mailto:Diane.Screnci@nrc.gov)

# Simplified Gaseous Effluent Flow Diagram Millstone Unit Two



Drawing Source: ML12128A379, annotated in red to show radiation monitors taken out of service (OOS)

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: JASON BOOKMILLER  
HQ OPS Officer: HOWIE CROUCH

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Event Number: 49313

Notification Date: 08/29/2013  
Notification Time: 11:33 [ET]  
Event Date: 08/29/2013  
Event Time: 08:44 [EDT]  
Last Update Date: 08/29/2013

Person (Organization):  
CHRISTOPHER NEWPORT (R1DQ)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****LOSS OF ASSESSMENT CAPABILITY DUE TO RADIATION MONITOR OUT OF SERVICE FOR PLANNED MAINTENANCE**

Millstone Unit 2 removed their plant high range stack radiation monitor RM-8168 from service for pre-planned maintenance. This represents a reportable loss of assessment capability under 10CFR50.72(b)(3)(xiii).

The licensee has notified the NRC Resident Inspector.

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: GERALD BAKER  
HQ OPS Officer: PETE SNYDER

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Event Number: 49349

Notification Date: 09/16/2013  
Notification Time: 16:57 [ET]  
Event Date: 09/16/2013  
Event Time: 15:00 [EDT]  
Last Update Date: 09/16/2013

Person (Organization):  
DON JACKSON (R1DQ)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****VENT STACK MONITOR MAINTENANCE**

"System(s) Affected: RM-8169 Vent Stack Radiation Monitor  
"Actuations & Their Initiation Signals: None  
"Causes (If known): Pre-Planned Maintenance  
"Effect of Event on Plant: Loss of assessment capability  
"Actions Taken or Planned: Compensatory samples - restore RM-8169 to service ASAP.  
"Additional Information: None"

The licensee notified the NRC Resident Inspector, the State of Connecticut and local Waterford Dispatch.

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: GERALD BAKER  
HQ OPS Officer: CHARLES TEAL

Event Number: 49893

Notification Date: 03/11/2014  
Notification Time: 11:49 [ET]  
Event Date: 03/11/2014  
Event Time: 09:31 [EDT]  
Last Update Date: 03/11/2014

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Person (Organization):  
MARC FERDAS (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****MILLSTONE STATION STACK RADMONITOR OUT-OF-SERVICE FOR PRE-PLANNED MAINTENANCE**

At 0931 EDT on 3/11/14, the Millstone Station Stack Radmonitor RM-8168 was removed from service for pre-planned maintenance. This resulted in a loss of assessment capability and is being reported under 10 CFR 50.72 (b)(3)(xiii).

The licensee informed State/local agencies and the NRC Resident Inspector.

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: VINCE WESSLING  
HQ OPS Officer: CHARLES TEAL

Event Number: 50165

Notification Date: 06/03/2014  
Notification Time: 13:41 [ET]  
Event Date: 06/03/2014  
Event Time: 09:33 [EDT]  
Last Update Date: 06/03/2014

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Person (Organization):  
PAUL KROHN (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****HIGH RANGE STACK MONITOR TAKEN OUT OF SERVICE FOR PLANNED MAINTENANCE**

At 0933 EDT, Millstone Station Unit 2 removed the Stack High Range Radiation Monitor RM-8168 from service for planned maintenance. Maintenance and testing were completed and the Stack Radiation Monitor returned to service at 1252 EDT.

The licensee informed both State and local agencies and the NRC Resident Inspector.

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: MICHAEL MAZZONE  
HQ OPS Officer: JEFF ROTTON

Event Number: 50343

Notification Date: 08/05/2014  
Notification Time: 13:47 [ET]  
Event Date: 08/05/2014  
Event Time: 07:47 [EDT]  
Last Update Date: 08/05/2014

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Person (Organization):  
DAN SCHROEDER (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****REMOVAL OF STACK HIGH RADIATION MONITOR FOR MAINTENANCE**

"Unit 2 high range stack radiation monitor, RM-8168, was removed from service for planned maintenance. This action is reportable as a loss of assessment capability per 10CFR50.72(b)(3)(xiii). RM-8168 will be restored to operable status by 1800 EDT.

The licensee notified the NRC Resident Inspector, State of Connecticut, and local agencies.

**Power Reactor**

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [2] [ ]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: ED SEACOR  
HQ OPS Officer: HOWIE CROUCH

Event Number: 50357

Notification Date: 08/12/2014  
Notification Time: 15:58 [ET]  
Event Date: 08/12/2014  
Event Time: 13:19 [EDT]  
Last Update Date: 08/12/2014

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Person (Organization):  
SILAS KENNEDY (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
2	N	Y	100	Power Operation	100	Power Operation

**Event Text****SITE STACK RADIATION MONITOR OUT OF SERVICE FOR PLANNED MAINTENANCE**

Millstone removed their site stack radiation monitor, RM-8169, from service for scheduled maintenance. Expected duration of maintenance is 8 hours.

The licensee notified the NRC Resident Inspector, the State of Connecticut, and the town of Waterford.



**TABLE IVC.-3**  
**Radioactive Gaseous Effluent Instrumentation**

Instrument	Minimum Channels Functional	Alarm Setpoints Required	Applicability	Action
<b>1.MP2 Vent (normal range, RM-8132 only; high range monitor, RM-8168, requirements are in the TS)</b>				
a. Noble Gas Activity Monitor	1	Yes***	**	A
b. Iodine Sampler	1	No	**	B
c. Particulate Sampler	1	No	**	B
d. Vent Flow Rate Monitor	1	No	**	C
e. Sampler Flow Rate Monitor	1	No	**	C
<b>2.Millstone Stack -- applicable to the WRGM (RM-8169, normal range, channel 1, only; mid range channel 2 and high range channel 3 requirements are contained in TRM LCO 3.3.3.8)</b>				
a. Noble Gas Activity Monitor	1	Yes***	**	E
b. Iodine Sampler	1	No	**	B
c. Particulate Sampler	1	No	**	B
d. Stack Flow Rate Monitor	1	No	**	C
e. Sampler Flow Rate Monitor	1	No	**	C
<b>3.Waste Gas Holdup System</b>				
a. Noble Gas Monitor Providing Automatic Termination of Release	1	Yes	*	D

\* During waste gas holdup system discharge.

\*\* At all times when air is being released to the environment by the pathway being monitored. The channel shall be FUNCTIONAL and in service on a continuous, uninterrupted basis. Outages are permitted for a maximum of 12 hours for the purpose of maintenance and performance of required tests, checks, calibrations, or sampling associated with the instrument or any system or component which affects functioning of the instrument.

\*\*\* No automatic isolation features.

#### **ACTION STATEMENTS**

##### **Action A**

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument and that grab samples are taken once per 12 hours and these samples are analyzed for gamma activity within 24 hours. If the monitor flow and readout are not adversely affected by the loss of functionality, the daily CHANNEL CHECK may be performed in lieu of the grab sample.



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#### Action B

With the number of samplers FUNCTIONAL less than required by the Minimum number FUNCTIONAL requirement, effluent releases via this pathway may continue provided that the best efforts are made to repair the instrument and that effluent is continuously sampled with auxiliary sampling equipment and collected at least once per seven (7) days and analyzed for principal gamma emitters with half lives greater than 8 days within 48 hours after the end of the sampling period. Auxiliary sampling must be initiated within 12 hours of initiation of this action statement. Operation of the auxiliary sampling equipment shall be verified every twelve (12) hours. Auxiliary sampling outages are permitted for a maximum of 12 hours for the purpose of maintenance and performance of required tests, checks, calibrations, or sampling.

#### Action C

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument and that the flow rate is estimated once per 5 hours. Sample flow rate need not be estimated if the auxiliary sampling equipment of Action B is in use.

#### Action D

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement:

Releases from the Millstone Unit 2 waste gas system may continue provided that best efforts are made to repair the instrument and that prior to initiating the release:

- a) At least two independent samples of the tank's contents are analyzed; and
- b) The original release rate calculations and discharge valve lineups are independently verified by a second individual. Otherwise, suspend releases from the waste gas holdup system.

#### Action E

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, Millstone Unit 2 releases via the Millstone Stack may continue provided that best efforts are made to repair the instrument and that grab samples are taken once per 12 hours and these samples are analyzed for gamma activity within 24 hours. If the monitor flow and readout are not adversely affected by the loss of functionality, the daily CHANNEL CHECK may be performed in lieu of the grab sample.



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MILLSTONE - UNIT 2

3/4 3-25

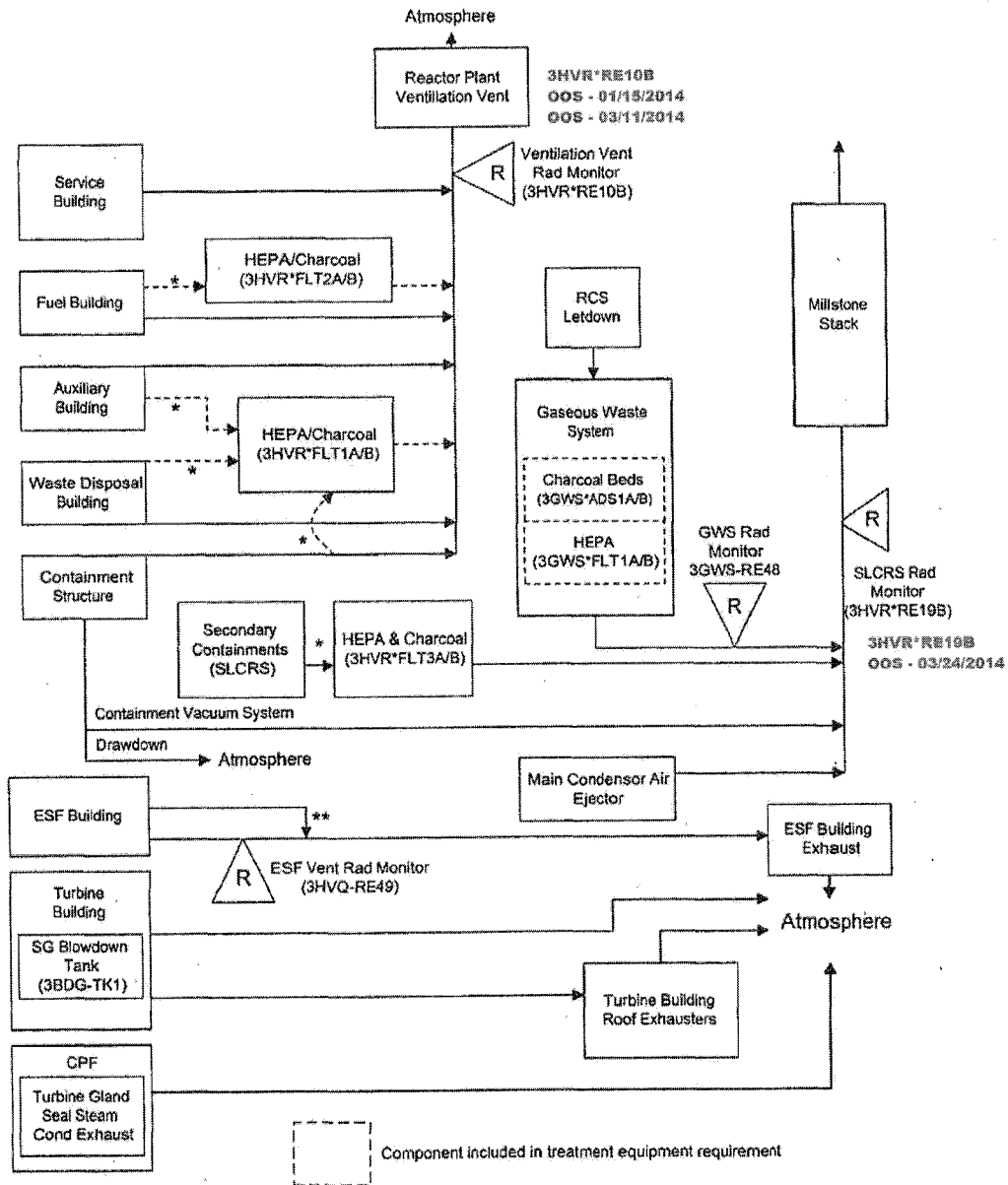
**TABLE 3.3-6**  
**RADIATION MONITORING INSTRUMENTATION**

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Delete					
b. Control Room Isolation	2	ALL MODES	2 mR/hr	$10^{-1} - 10^4$ mR/hr	16
c. Containment High Range	1	1, 2, 3, & 4	100 R/hr	$10^0 - 10^8$ R/hr	17
2. PROCESS MONITORS					
a. Containment Atmosphere-Particulate	1	1, 2, 3, & 4	NA	$10 - 10^{+6}$ cpm	14
b. Containment Atmosphere-Gaseous	1	1, 2, 3, & 4	NA	$10 - 10^{+6}$ cpm	14
c. Noble Gas Effluent Monitor (high range) (Unit 2 stack)	1	1, 2, 3, & 4	$2 \times 10^{-1}$ uci/cc	$10^{-3} - 10^5$ uci/cc	17

**ACTION 17 -** With the number of OPERABLE channels less than required by the MINIMUM CHANNELS OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:

- 1) either restore the inoperable channel(s) to OPERABLE status within 7 days of the discovery or
- 2) prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following discovery outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

# Simplified Gaseous Effluent Flow Diagram Millstone Unit Three



Drawing Source: ML12128A379, annotated in red to show monitors taken out of service (OOS)

**Power Reactor**

Event Number: 49724

Facility: MILLSTONE

Notification Date: 01/15/2014

Region: 1 State: CT

Notification Time: 12:29 [ET]

Unit: [ ] [ ] [3]

Event Date: 01/15/2014

RX Type: [1] GE-3,[2] CE,[3] W-4-LP

Event Time: 09:48 [EST]

NRC Notified By: TODD FISHER

Last Update Date: 01/15/2014

HQ OPS Officer: STEVE SANDIN

Emergency Class: NON EMERGENCY

Person (Organization):

10 CFR Section:

JOHN ROGGE (R1DO)

50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
3	N	Y	100	Power Operation	100	Power Operation

**Event Text**

NORMAL VENTILATION RADIATION MONITOR REMOVED FROM SERVICE FOR PLANNED MAINTENANCE

"[The] Normal Ventilation Normal Range Process Radiation Monitor 3HVR\*RE10B [was] removed from service for planned maintenance. [The affected Radiation Monitor] will be returned to service following maintenance."

The licensee informed State and local agencies and the NRC Resident Inspector.

**Power Reactor**

Event Number: 49891

Facility: MILLSTONE

Notification Date: 03/11/2014

Region: 1 State: CT

Notification Time: 08:32 [ET]

Unit: [ ] [ ] [3]

Event Date: 03/11/2014

RX Type: [1] GE-3,[2] CE,[3] W-4-LP

Event Time: 07:00 [EDT]

NRC Notified By: WAYNE HARRELSON

Last Update Date: 03/11/2014

HQ OPS Officer: JEFF ROTTON

Emergency Class: NON EMERGENCY

Person (Organization):

10 CFR Section:

MARC FERDAS (R1DO)

50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
3	N	Y	100	Power Operation	100	Power Operation

**Event Text**

NORMAL VENTILATION PROCESS RADIATION MONITOR OUT OF SERVICE FOR PLANNED MAINTENANCE

Normal ventilation - normal and high range process radiation monitor, 3HVR\*RE10A/B, has been removed from service for planned maintenance. The maintenance window is scheduled for 7 hours.

The licensee notified the NRC Resident Inspector, the State of Connecticut Department of Environmental Protection, and Local police dispatch.

Power Reactor

Facility: MILLSTONE  
Region: 1 State: CT  
Unit: [ ] [ ] [3]  
RX Type: [1] GE-3,[2] CE,[3] W-4-LP  
NRC Notified By: TODD STRINGFELLOW  
HQ OPS Officer: DONALD NORWOOD

Emergency Class: NON EMERGENCY  
10 CFR Section:  
50.72(b)(3)(xiii) - LOSS COMM/ASMT/RESPONSE

Event Number: 49951

Notification Date: 03/24/2014  
Notification Time: 15:11 [ET]  
Event Date: 03/24/2014  
Event Time: 10:43 [EDT]  
Last Update Date: 03/24/2014

Person (Organization):  
MEL GRAY (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
3	N	Y	100	Power Operation	100	Power Operation

Event Text

RADIATION MONITOR OUT OF SERVICE FOR PRE-PLANNED MAINTENANCE

"System affected: SLCRS [Supplementary Leakage Collection and Release System] radiation monitor.

"Actuations and their initiation signals: N/A.

"Causes: Pre-planned maintenance.

"Effect of event on plant: Ventilation process radiation for SLCRS.

"Actions taken or planned: Return to service within 24 hrs.

"Additional information: None."

The licensee notified the NRC Resident Inspector and applicable State and local agencies.

**TABLE VC.-3**  
**Radioactive Gaseous Effluent Monitoring Instrumentation**

Instrument	Minimum Channels Functional	Applicability	Action
<b>1. Millstone Unit 3 Ventilation Vent (Turbine Building - HVR-RE10B, normal range only; high range monitor, HVR-RE10A, requirements are in the TRM)</b>			
a. Noble Gas Activity Monitor Providing Alarm	1	*	A
b. Iodine Sampler	1	*	B
c. Particulate Sampler	1	*	B
d. Vent Flow Rate Monitor	1	*	C
e. Sampler Flow Rate Monitor	1	*	C
<b>2. Millstone Stack - applicable to SLCRS (HVR-RE19B, normal range only; high range monitor, HVR-RE19A, requirements are in the TRM)</b>			
a. Noble Gas Activity Monitor Providing Alarm	1	*	A
b. Iodine Sampler	1	*	B
c. Particulate Sampler	1	*	B
d. Process Flow Rate Monitor	1	*	C
e. Sampler Flow Rate Monitor	1	*	C
<b>3. Engineered Safeguards Building Monitor (HVQ-RE49)</b>			
a. Noble Gas Activity Monitor	1	*	D
b. Iodine Sampler	1	*	B
c. Particulate Sampler	1	*	B
d. Discharge Flow Rate Monitor	1	*	E
e. Sampler Flow Rate Monitor	1	*	C

**TABLE VC.-3**  
**Table Notations**

- \* Whenever the release path is in service. Outages are permitted for a maximum of 12 hours for the purpose of maintenance and performance of required tests, checks, calibrations, or sampling associated with the instrument or any system or component which affects functioning of the instrument.



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**TABLE V.C. -3**  
**ACTION STATEMENTS**

**Action A**

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue provided that

- a) best efforts are made to repair the instrument and that grab samples are taken at least once per 12 hours and these samples are analyzed for gamma radioactivity within 24 hours, OR
- b) if the cause of the nonfunctionality is solely due to a loss of annunciation in the control room and the Remote Indicating Controller (RIC) remains FUNCTIONAL, perform a channel check at the RIC at least once per twelve hours and verify the indication has not alarmed.

**Action B**

With the number of samplers FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue provided that the best efforts are made to repair the instrument and that effluent is continuously sampled with auxiliary sampling equipment at least once per seven (7) days and analyzed for principal gamma emitters with half lives greater than 8 days within 48 hours after the end of the sampling period. Auxiliary sampling must be initiated within 12 hours after initiation of this ACTION statement. Operation of the auxiliary sampling equipment shall be verified every twelve (12) hours. Auxiliary sampling outages are permitted for a maximum of 12 hours for the purpose of maintenance and performance of required tests, checks, calibrations, or sampling.

**Action C**

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue provided that best efforts are made to repair the instrument and that the flow rate is estimated at least once per 5 hours. Sample flow rate need not be estimated if the auxiliary sampling equipment of Action B is in use.

**Action D**

With the number of channels FUNCTIONAL less than required by the Minimum Channels FUNCTIONAL requirement, effluent releases via this pathway may continue, provided that best efforts are made to repair the instrument and that grab samples are taken at least once per 12 hours and these samples are analyzed for gamma radioactivity within 24 hours.

**Action E**



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