New: 1/2-ODC-2.03 Old: SECTION 3

Beaver Valley Power Station

Unit 1/2

1/2-ODC-2.03

ODCM: Radiological Environmental Monitoring Program

Document Owner Manager, Health Physics

Revision Number	0
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

Beaver Valley Power Station Procedure Number: 1/2-ODC-2.0									
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1.0 <u>PURPOSE</u>

- 1.1 This procedure provides the Radiological Environmental Monitoring Program (REMP) requirements from the Radiological Branch Technical Position.^(3.1.1)
 - 1.1.1 Prior to issuance of this procedure, these items were located in Section 3 of the old ODCM.

2.0 <u>SCOPE</u>

2.1 This procedure is applicable to all station personnel that are qualified to perform activities as described and referenced in this procedure.

3.0 REFERENCES AND COMMITMENTS

3.1 <u>References</u>

- 3.1.1 Radiological Branch Technical Position, Revision 1, 1979.
- 3.1.2 Regulatory Guide 1.109, Calculation of Annual Dose to Man From Routine Releases of Reactor Effluents For the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, 1977.
- 3.1.3 NUREG-1301, Offsite Dose Calculation Manual Guidance; Standard Radiological Effluent Controls for Pressurized Water Reactors (Generic Letter 89-01, Supplement No. 1).
- 3.1.4 Regulatory Guide 1.111, Methods For Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases From Light-Water-Cooled Reactors, Revision 1, July 1977.
- 3.1.5 1/2-ADM-1640, Control of the Offsite Dose Calculation Manual
- 3.1.6 1/2-ADM-0100, Procedure Writers Guide
- 3.1.7 1/2-ADM-0101, Review and Approval of Documents

3.2 <u>Commitments</u>

3.2.1 10 CFR 50 Appendix I

4.0 <u>RECORDS AND FORMS</u>

4.1 <u>Records</u>

4.1.1 Any calculation supporting ODCM changes shall be documented, as appropriate, by a retrievable document (e.g., letter or calculation package) with an appropriate RTL number.

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4.2 <u>Forms</u>

4.2.1 None.

5.0 PRECAUTIONS AND LIMITATIONS

5.1 The specified detection capabilities are state-of-the-art for routine environmental measurements in industrial laboratories.

6.0 ACCEPTANCE CRITERIA

- 6.1 Any change to this procedure shall contain sufficient justification that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a and Appendix I to 10 CFR 50, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculation.
 - 6.1.1 All changes to this procedure shall be prepared in accordance with 1/2-ADM-0100^(3.1.6) and 1/2-ADM-1640^(3.1.5).
 - 6.1.2 All changes to this procedure shall be reviewed and approved in accordance with 1/2-ADM-0101^(3.1.7) and 1/2-ADM-1640^(3.1.5).

7.0 <u>PREREOUISITES</u>

7.1 The user of this procedure shall be familiar with ODCM structure and format.

8.0 <u>PROCEDURE</u>

8.1 <u>REMP Overview</u>

8.1.1 Attachment A, Table 3.0-1 contains the site number, sector, distance, sample point description, sampling and collection frequency, analysis, and analysis frequency for various exposure pathways in the vicinity of the Beaver Valley Power Station for the REMP. Attachment B, Figures 3.0-1 through 3.0-6 show the location of the various sampling points.

8.2 Sampling and Analysis Program

- 8.2.1 Environmental samples shall be collected and analyzed according to Attachment A, Table 3.0-1. Analytical techniques used shall be such that the detection capabilities in 1/2-ODC-3.03, Table 4.12-1 are achieved.
- 8.2.2 The results of the radiological environmental monitoring are intended to supplement the results of the radiological effluent monitoring by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways.

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8.2.2.1	The specified environmental monitoring progra radiation and of radioactive materials in those e radionuclides which lead to the highest potentia resulting from the station operation.	xposure pathwa	ays and for those			
8.2.2.2	The initial radiological environmental monitori for the first 3 years of commercial operation (or maximum burnup in the initial core cycle). Fol changes may be proposed based on operational	r other period c llowing this per	orresponding to a			
unc	viations are permitted from the required sampling obtainable due to hazardous conditions, seasonal u omatic sampling equipment and other legitimate r	navailability, n	cimens are nalfunction of			
8.2.3.1	IF specimens are unobtainable due to sampling every effort shall be made to complete correcti sampling period.	equipment ma ve action prior	lfunction, <u>THEN</u> to the end of the next			
8.2.3.2	All deviations from the sampling schedule sha REMP report.	Il be documente	ed in the annual			
8.3 <u>Crossc</u>	heck Program					
par Ra	e laboratories of the licensee and licensee's contra ticipate in the Environmental Protection Agency' dioactivity Laboratory Intercomparisons Studies (ogram.	s (EPA's) Envi	ronmental			
8.3.1.1	This participation shall include all of the deter radionuclide combination) that are offered by monitoring program.	minations (sam EPA and that al	ple medium- lso are included in the			
8.3.1.2	The results of analysis of these crosscheck san REMP report. The participants in the crossche program code so that the NRC can review the submission in the annual REMP report.	eck program ma	ay provide their			
8313	IF the results of a determination in the crossch	eck program a	re outside the			

- 8.3.1.3 IF the results of a determination in the crosscheck program are outside the specified control limits, <u>THEN</u> the laboratory shall investigate the cause of the problem and take steps to correct it. The results of this investigation and corrective action shall be included in the annual REMP report.
- 8.3.2 The requirement for the participation in the crosscheck program, is based on the need for independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices as part of the quality assurance program for environmental monitoring in order to demonstrate the results are reasonably valid.

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8.4 Land Use Census Program

- 8.4.1 A census shall be conducted annually during the growing season to determine the location of the nearest milk animal, and nearest garden greater than 50 square meters (500 sq. ft.) producing broad leaf vegetation in each of the 16 meteorological sectors within a distance of 8 km (5 miles).
 - 8.4.1.1 For elevated releases as defined in Regulatory Guide 1.111^(3.1.4), the census shall also identify the locations of <u>all</u> milk animals, and gardens greater than 50 square meters producing broad leaf vegetation out to a distance of 5 km (3 miles) for each radial sector.
 - 8.4.1.2 IF it is learned from this census that the milk animals or gardens are present at a location which yields a calculated thyroid dose greater than those previously sampled, or if the census results in changes in the location used in ODCM dose calculations, <u>THEN</u> a written report shall be submitted to the Director of Operating Reactors, NRR (with a copy to the Director of the NRC Regional Office) within 30 days identifying the new location (distance and direction).
 - 8.4.1.2.1 Milk animal or garden locations resulting in higher calculated doses shall be added to the surveillance program as soon as practicable.
 - 8.4.1.3 The sampling location (excluding the control sample location) having the lowest calculated dose may then be dropped from the surveillance program at the end of the grazing or growing season during which the census was conducted. Any location from which milk can no longer be obtained may be dropped from the surveillance program after notifying the NRC in writing that they are no longer obtainable at that location.
 - 8.4.1.4 The results of the land-use census shall be reported in the annual REMP report.
 - 8.4.1.5 The census of milk animals and gardens producing broad leaf vegetation is based on the requirement in Appendix I of 10 CFR Part 50^(3.2.1) to "Identify changes in the use of unrestricted areas (e.g., for agricultural purposes) to permit modifications in monitoring programs for evaluating doses to individuals from principal pathways of exposure." The consumption of milk from animals grazing on contaminated pasture and of leafy vegetation contaminated by airborne radioiodine is a major potential source of exposure. Samples from milk animals are considered a better indicator of radioiodine in the environment than vegetation.
 - 8.4.1.5.1 IF the census reveals milk animals are not present or are unavailable for sampling, <u>THEN</u> vegetation must be sampled.
- 8.4.1.6 The 50 square meter garden, considering 20% used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and a vegetation yield of 2 kg/m², will produce the 26 kg/yr assumed in Regulatory Guide 1.109^(3.1.2), for child consumption of leafy vegetation.

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8.5 Direct Radiation Monitoring Program

8.5.1 The increase in the number of direct radiation stations is to better characterize the individual exposure (mrem) and population exposure (man-rem) in accordance with Criterion 64 - monitoring radioactivity releases, of 10 CFR Part 50, Appendix A. The NRC will place a similar amount of stations in the area between the two rings designated in 1/2-ODC-3.03, Table 3.12-1.

- END -

				TABLE 3.0-1 PROGRAM DETAILS				ODCM:	Tiolo
EXPOSURE PATHWAY AND/OR SAMPLE	<u>SITE</u> NO.	SECTOR!	MILES ²	SAMPLE POINT DESCRIPTION ³	SAMPLING AND COLLECTION FREQUENCY	<u>TYPE AND FREQUENCY</u> OF ANALYSES			В
1. AIRBORNE Radioiodine and Particulates	13 30 32 46.1	11 4 15 3	1.4 0.5 0.8 2.3	Meyer's Fame Shippingport (S.S.) Midland (S.S.) Industry, Midway Dr.	Continuous sampler operation with collection at least weekly	Radioiodine Cartridge: I-131 analysis weekly. Particulate Sampler: Gross	EXPOS	Radiological Environmental Monitoring Program	Beaver V
	48	10	16.3	Weirton, W. Va., Weirton Water Tower, Collier Way ⁴		beta analysis following filter change ⁵ ; Gamma isotopic analysis on composite (by location) quarterly.	ATTACHMENT A Page 1 of 4 EXPOSURE PATHWAY AND SAMPLING REQUIREMENTS	ronmental]	Valley Po
2. DIRECT RADIATION	10 13	3 11	1.0 1.4	Shippingport Boro Meyer's Farm	Continuous measurement with	Gamma dose quarterly.	AT	Monito	Power
	14 15	11		Hookstown	quarterly		ATTACHMENT Page 1 of 4 AY AND SAMPI	ă.	
	15 27	14		Georgetown Post Office	collection.		FACHMEN Page 1 of 4 AND SAM	00	Station
	27	7		Brunton's			US H	Pro	Ē.
	28 29B	1		Sherman's Farm			Ă S Ă	ğ	Q
	30	3 4		Beaver Valley Geriatric Center			A 4 Z	an	
	30	4 15		Shippingport (S.S.)			T A		
	32 45	15 5		Midland (S.S.)					
	45.1	6	1.9	Rt. 18 & Anderson Street Raccoon Twp., Kennedy's Corner			G RE		
	46	3		Industry, Midway Drive			Q		
	46.1	3		Industry, Rt. 86 - Garage					
	47	14	4.9	East Liverpool, OH Water Freatment Plant			LEMI	Unit: 1/2 Revision: 0	rocedur
	48	10	16.3	Weirton, W. Va., Weirton Water Tower, Collier Way			INTS		e Numb
	51	5	8.0	Aliquippa (S.S.)				န္ဒိုင္ခ်ိုင္ခ်ို	5 8
	59	6		236 Green Hill Rd.					ΞI
	60	13		44 Hill Road				Level Of Use: General SI Page Number: 8 c	5
	70	I	E	N. of Western. Beaver School- Engle Rd.					nber: /2-ODC-2 03
	71	2	6.0 H H	Brighton Twp., First Western Bank		· · · · · ·	P	Level Of Use: General Skill Reference Page Number: 8 of 18	

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TABLE 3.0-1

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PROGRAM DETAILS

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		<u> </u>		TABLE 3.0-1 PROGRAM DETAILS				Title: ODCM:	
					SAMPLING AND				
EXPOSURE	OTT			SAMPLE POINT	<u>COLLECTION</u>	TYPE AND FREQUENCY		lac	
PATHWAY AND/OR	SITE	SECTOR ¹	MILEO2	DESCRIPTION ³	FREQUENCY	OF ANALYSES		lio	B
SAMPLE	<u>NO.</u>	SECTOR	MILCO	DESCRIPTION	<u>I'REQUERCT</u>	<u>OI_ARABIODS</u>		Į	Q
2. DIRECT RADIATION	72	3	3.3	Industry, Logan Park	Continuous	Gamma dose quarterly.	ш	Radiological Environmental Monitoring Program	Beaver
(continued)	73	4	2.5	618 Squirrel Run Road	measurement with		ATTACHMENT A Page 2 of 4 EXPOSURE PATHWAY AND SAMPLING REQUIREMENTS	H	۲ <u>۵</u>
	74	4	7.0	CCBC, 137 Poplar Avenue	quarterly		ŏ	j,	1
	75	5	4.1	117 Holt Road	collection.		SU	lin	Valley
	76	6	3.8	Raccoon Elementary School			JR	Di	
	77	6	5.6	3614 Green Garden Road			E	ne	S
	78	7	2.7	Raccoon Municipal Building			A	nte	12
	79	8	4.4	Rt. 151 & Pross Ln.			TH	ニア	12
	80	9	8.2	Raccoon Park Office, Rt. 18			ŦŢ.	- A	Power
	81	9	3.6	Millcreek United Presb. Church			A	ni	l.õ
	82	9	6.9	Hanover Municipal Building			K H	ĝ	
	83	10	4.2	735 Mill Creek Road			A Pa	ing	$\overline{\mathbf{S}}$
	84	11	8.3	Hancock Parks & Recreation			ATTACHMENT Page 2 of 4 AY AND SAMPI	Ч ⁶	Station
				Complex			。 S N 世	I.	
	85	12	5.7	Rts. 8 and 30 Intersection			2, 9, 1 1	l Bis	
	86	13	6.2	East Liverpool, Oh., 1090 Ohio			E 4 A	Ĩ	-
				Avenue			ſ A		
	87	14	7.0	Calcutta, Oh Calcutta Smith's			Z -		
				Ferry Rd & Valley Drive			ရ		
	88	15	2.8	Midland Heights, 110 Summit			RH		
	•••			Road			Ö		
	89	15	4.8	Ohioville, 488 Smith's Ferry			ŝ	·	<u> </u>
	07			Road			RI	Unit: 1/2 Revision: 0	l 7
	90	16	5.2	Opposite Fairview School	•		ËN		l ğ
	91	2	3.9	Pine Grove & Doyle Roads			E	ă N	Ĩ
	92	12	2.8	Georgetown Road (S.S.)			EL		
	93	16	1.1	Midland – Sunrise Hills			Ś	305	Procedure Number
	94	8	2.2	McCleary Road & Pole Cat					0
	74	Ų		Hollow Road					Z
	95	10	2.3	832 McCleary Road				General Sy Page Number: 9 c	12
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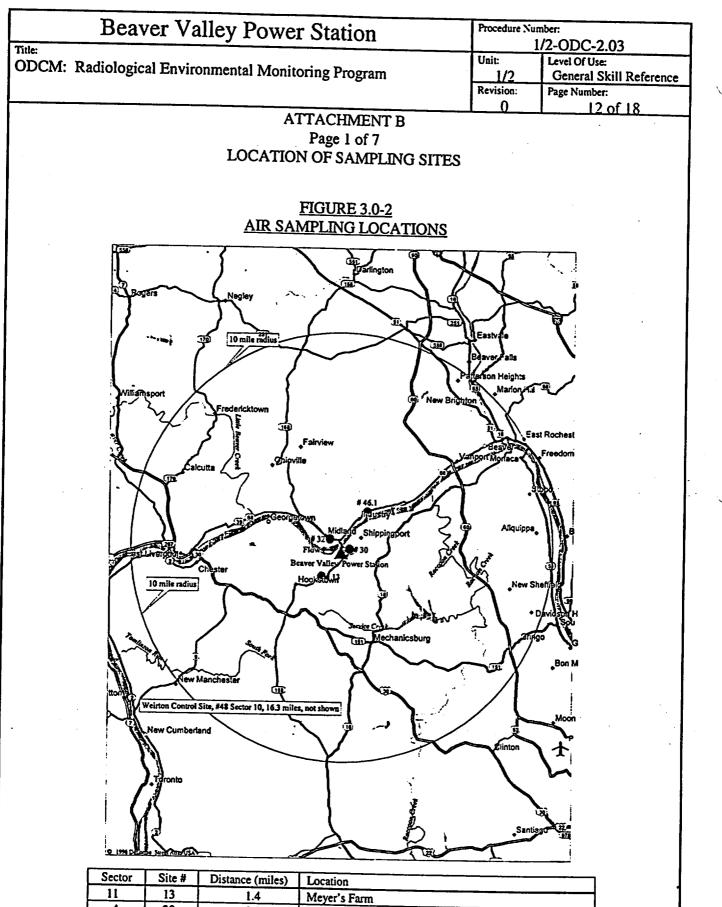
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				TABLE 3.0-1 (continued)					<u></u>
				•				ODCM:	
				PROGRAM DETAILS					
<u>EXPOSURE</u> <u>PATHWAY AND/OR</u> <u>SAMPLE</u>	<u>SITE</u> NO.	SECTOR ¹	MILES ²	SAMPLE POINT DESCRIPTION ³	SAMPLING AND COLLECTION FREOUENCY	2 TYPE AND FREQUENCY OF ANALYSES			
 WATERBORNE a) Surface (River) 	49	3	5.0	Upstream side of Montgomery Dam ⁴	Composite sample with sample	monthly; tritium analysis on	EX	logical	Beaver
	2.1	14	1.5	Downstream, Midland – J&L	collection at least monthly ⁶ .	composite (by location) quarterly.	POSU	Enviro	r Va
b) Drinking Water	4 5	15 14	1.3 4.9	Midland Water Treatment Plant East Liverpool, Oh., Water Treatment Plant	Composite sample with sample collection at least bi-weekly ⁶ .	I-131 analysis bi-weekly; gamma isotopic analysis on composite (by location) monthly; tritium analysis on composite (by location) quarterly.	AT EXPOSURE PATHWAY	Radiological Environmental Monitoring Program	Valley Power
c) Ground Water		•		None required ⁷			TACHI Page 3 AND S	ring Pr	Station
d) Shoreline Sediment	2A	13	0.2	BVPS Outfall Discharge	Semi-annually.	Gamma isotopic analysis semi-annually.	ATTACHMENT , Page 3 of 4 AY AND SAMPL	ogram	ion
4. INGESTIONa) Milk	25 * ⁸ * ⁸	10 	 		At least bi-weekly when animals are on pasture; at least	Gamma isotopic and I-131 analysis on each sample.	TACHMENT A Page 3 of 4 AND SAMPLING REQUIREMENTS		
	96	10	10.4		monthly at other times.		JIRE	Unit: 1/2 Revision:	Proce
b) Fish	2A	13	0.2	-	Semi-annually one sample of	Gamma isotopic analysis. On edible portion.	MEN		Procedure Number 1/2-
	49	3			available species.		S -		B
c) Food Products (Leafy Vegetables)	 		I I	Three (3) locations within 5 niles of BVPS (Shippingport, Industry, and Georgetown) ⁹ One (1) control location Weirton, W. Va. area) ⁹	Annually at harvest time.	Gamma isotopic and I-131 analysis on edible portion.		ruse: al Skill Reference mber:	C-2.03

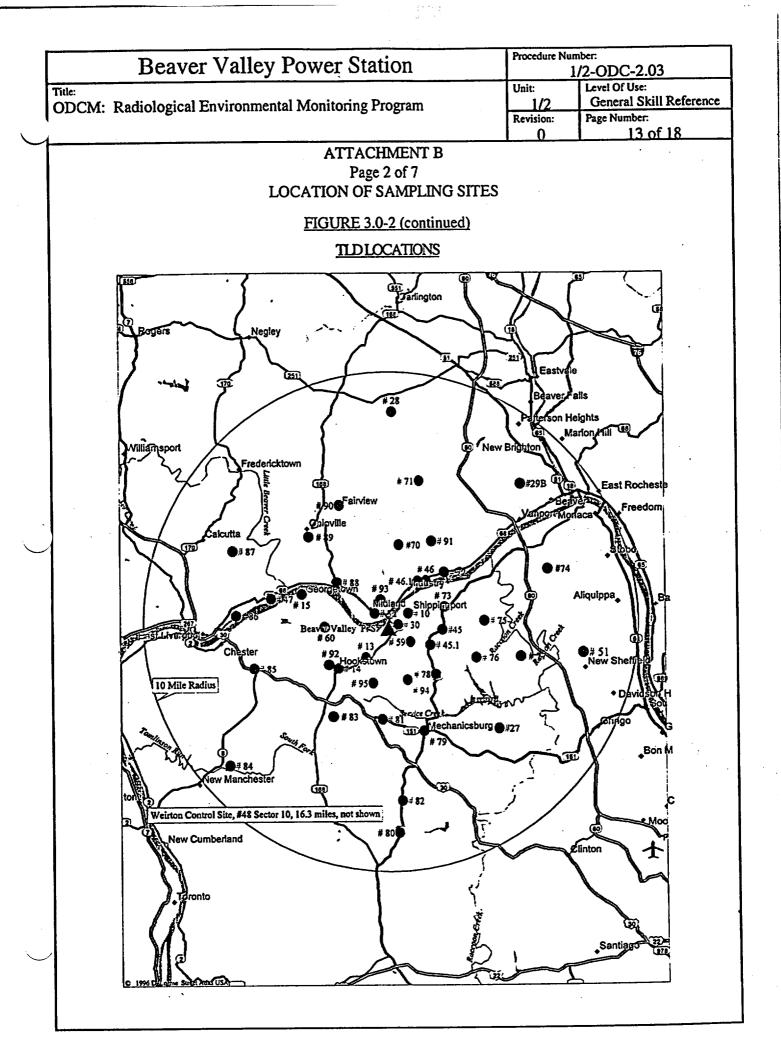
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	TABLE 3.0-1 (continued)	Title: ODCM:	
	PROGRAM DETAILS	M.	
•	EXPOSURE SITE SECTOR! MILES' SAMPLE POINT SAMPLING AND TYPE AND FREQUENCY PATHWAY AND/OR NO. DESCRIPTION' COLLECTION OF ANALYSES SAMPLE FREQUENCY FREQUENCY TI	Radiological Environmental Monitoring Program	Beaver
	¹ Sector numbers 1-16 correspond to the 16 compass direction sectors N - NNW.	ll Env	er V
	² Distance (in miles) is as measured from BVPS Unit 1 Containment Building.	ironi	'alle
	 ¹ Sector numbers 1-16 correspond to the 16 compass direction sectors N - NNW. ² Distance (in miles) is as measured from BVPS Unit 1 Containment Building. ³ All Sample Points, unless otherwise noted, are in the Commonwealth of Pennsylvania. Maps showing the approximate locations of the Sample Points are provided as Attachment B, Figures 3.0-1 through 3.0-6. ⁴ This is a Control Station and is presumed to be outside the influence of BVPS effluents. ⁵ A gamma isotopic analysis is to be performed on each sample when the gross beta activity is found to be greater than 10 times the mean of the Control Station sample. 	mental N	
	⁴ This is a Control Station and is presumed to be outside the influence of BVPS effluents.	Aoni	Power
	 ⁵ A gamma isotopic analysis is to be performed on each sample when the gross beta activity is found to be greater than 10 times the mean of the Control Station sample. ⁶ Composite samples are obtained by collecting an aliquot at intervals not exceeding 2 hours. For the upstream surface water location site 49, a weekly grab sample, composited each month based on river flow at time of sampling is also acceptable. 	toring P	r Station
		rogram	tion
	⁷ Collection of Ground Water samples is not required as the hydraulic gradient or recharge properties are directed toward the river because of the high terrain in the river valley at the BVPS; thus, station effluents do not affect local wells and ground water sources in the area.		
	⁸ These Sample Points will vary and are chosen based upon calculated annual deposition factors (highest).		
	 ⁶Composite samples are obtained by collecting an aliquot at intervals not exceeding 2 hours. For the upstream surface water location site 49, a weekly grab sample, composited each month based on river flow at time of sampling is also acceptable. ⁷Collection of Ground Water samples is not required as the hydraulic gradient or recharge properties are directed toward the river because of the high terrain in the river valley at the BVPS; thus, station effluents do not affect local wells and ground water sources in the area. ⁸These Sample Points will vary and are chosen based upon calculated annual deposition factors (highest). ⁹Exact location may vary due to availability of food products. 	Unit: 1/2 Revision: 0	Procedure Numbe
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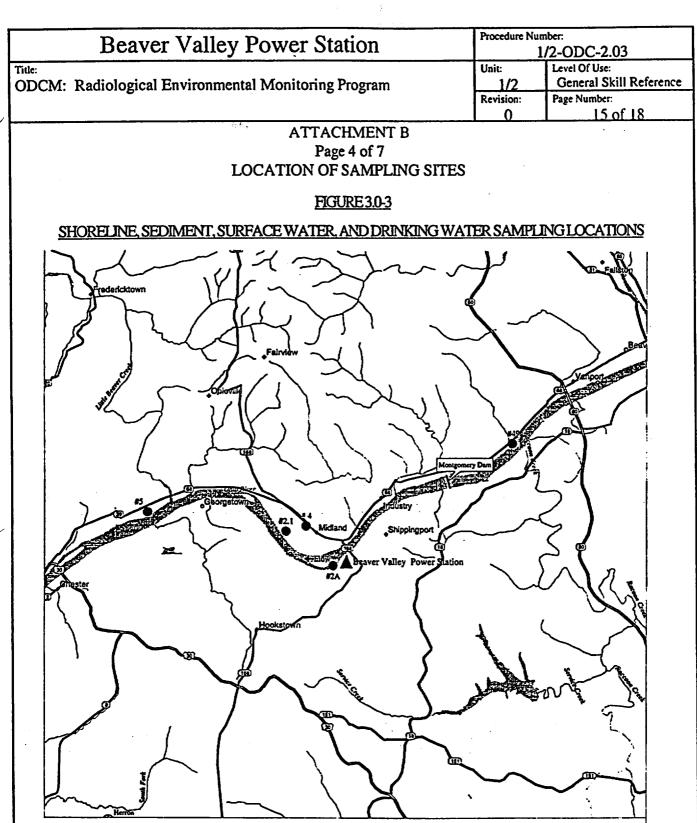
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	4	30	0.5	Shippingport (S. S.)
ļ	15	32	0.8	Midland (S.S.)
ļ	3	46.1	2.3	Industry, Rt. 68 Garage
Į	10	48	16.4	Weirton, W. VaWeirton Water Tower, Collier Way
				, the states that i ower, conter thay



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Casta	014	101		lou	thez	st				
Sector	Site #	Distanc		1	Se	ctor	Site	# Distan	cel	Location
7	-	(miles)		÷	34. 34			(miles		Location
7	27	6.1	Brunton's Farm	1	i.	7	78	2.7		Municipal Bldg.
6	45.1	1.9	Raccoon Twp., Kennedy Corner	s É	÷.	8	79	4.4		k Pross Ln.
5	51	8.0	Aliquippa (S.S.)		6	9	80	8.2		Park Office-Rt. 18
6	59	1.0	236 Green Hill Road		-	9	82	6.9		Municipal Building
6	76	3.8	Raccoon Elementary School	T		8	94	2.2	McClear	y Road &
										Hollow Road
6	77	5.6	3614 Green Garden Road	Γ				1		
			N		hwe	L		<u> </u>		
Sector	Site #	Distance	Location IN		_	_				
		(miles)	Location	· •	See	tor	Site #	Distanc		Location
14	15	3.7	Georgetown Post Office	+	+-			(miles)		
	· · ·	0.7	Georgetown Post Office	1.	14	4	87	7.0	Calcutta,	Oh Calcutta Smith's
15	32	0.8	Midland (S.S.)	+	+				Ferry Rd	& Valley Drive
14	47	4.9	E. Liverpool, Oh.	+	1:	_	88	2.8	Midland I	Heights - 110 Summit Rd
			(Water Company)		1.5		89	4.8	Ohioville	- 488 Smith's Ferry Road
13	60	2.5	Haney's Farm	╋	+			ļ		
13	86	6.2	E. Liverpool, Oh., 1090 Ohio	+	10		90	5.2		Fairview School
		-	Avenue		16	'	93	1.1	Midland -	Sunrise Hills
					·					
			N	ort	heas	t				
Sector	Site #	Distance	Location		Sec	_	Site #	Distance	1	Location
		(miles)						(miles)		Location
4	10	1.0	Shippingport Boro		1	-†-	70	3.4	North of Y	Vestern Beaver School -
					1			J. 4	Engle Roa	
1	28		Sherman's Farm		2		71	6.0		
3	29B	8.0	Beaver Valley Geriatric Ctr.	1	3		72	3.3	Inductor T	Wp., First Western Bank
_4	30	0.5	Shippingport (S.S.)		4		73	2.5		ogan Park
5	45	2.2	Rt. 18 & Anderson Street		4	_	74	7.0		el Run Road
3	46	2.5	Industry, Midway Drive		5	_	75	4.1	117 Holt F	37 Poplar Avenue
3	46.1		Industry, Rt. 68 - Garage		2	_	75 91	<u>4.1</u> 3.9		
				L					I'me Grove	e Rd. & Doyle Rd.
ector	City July			uth	wes	-				
CCOL		Distance	Location		Sect	or S	ite #	Distance		Location
+		(miles)		<u>ا</u>				(miles)		
11	13	1.4	Meyer's Farm		11		84	8.3	Hancock C	o. Parks & Recreation
+									Complex	
<u>11</u> 10	14		Hookstown		12		85			Intersection
10	48	16.3	Weirton, W. Va., - Weirton		12	_	92	2.8	Georgetow	
	81	3.6 1	Water Tower, Collier Way	ж. Ус			[· =		
0		56 0	Villereek United Droch Church	1	10		95			
9 10	83		Millcreek United Presb. Church 35 Mill Creek Road	20	10		93 J	2.3	832 McCle	ary Road

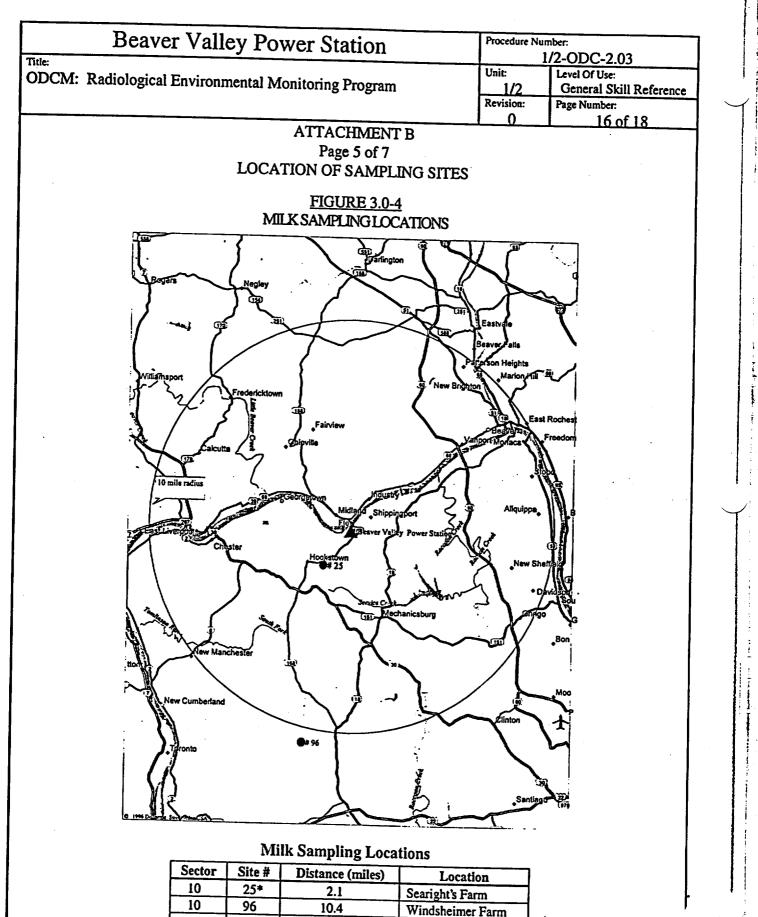


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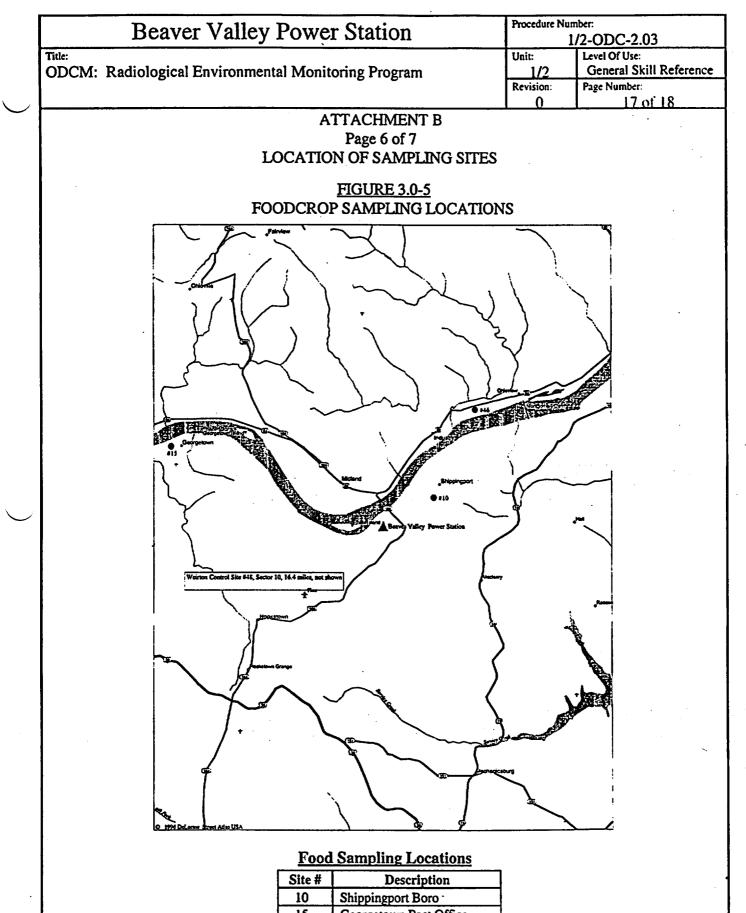
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Water/Shoreline Sediment Sampling Locations

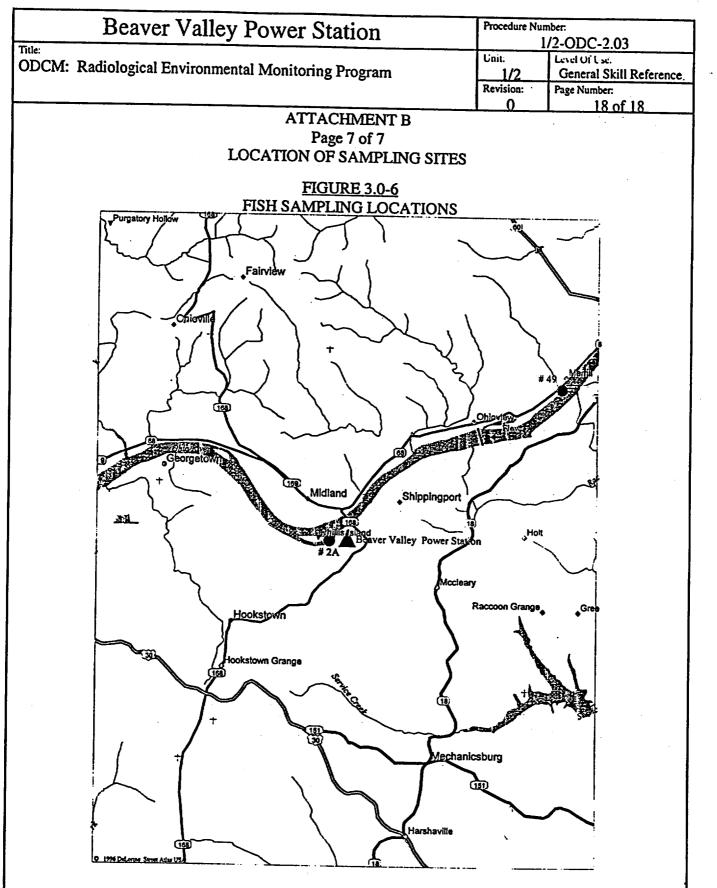
Sample Type	Sector	Site #	Distance (miles)	Location
Surface Water	14	2.1	1.5	Downstream, Midland - J&L
Surface Water	3	49	5.0	Upstream side of Montgomery Dam
Sediment	13	2A	0.2	BVPS Outfall Discharge
Drinking Water	15	4	1.3	Midland Water Treatment Plant
Drinking Water	14	5	4.9	E. Liverpool, Oh. Water Treatment Plant



	*	
	*	
	*	
*T	hree dairie	s based on highest deposition factors.



1	15	Georgetown Post Office
	46	Industry, Midway Dr.
	48	Weirton, W. Va., - Weirton
		Water Tower, Collier Way



Fish Sampling Locations

Sector	Site #	Distance (miles)	Location
13	2A	0.2	BVPS Outfall Discharge
3	49		Upstream side of Montgomery Dam

New: 1/2-ODC-2.04 Old: SECTION 4

.

Beaver Valley Power Station

Unit 1/2

1/2-ODC-2.04

ODCM: Information Related to 40 CFR 190

Document Owner Manager, Health Physics

Revision Number	0
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

Beaver Valley Power Station	Procedure No	umber: 1/2-ODC-2.04
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1.0 PURPOSE	·	
2.0 SCOPE		
OU MOOLI TAILE CRITERIA		······4 /
1.0 TREALQUISTIES		······4
8.1 Information Related To 40 CFR 190		
8.2 Inside The Site Boundary Radiation Doses	••••••	

Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-2.04
Title:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Information Related to 40 CFR 190	Revision: 0	Page Number: 3 of 6

1.0 PURPOSE

- 1.1 This procedure provides the steps to be taken when the Total Dose of ODCM Control 4.11.4.1 exceeds twice the limit of any of the ODCM Controls specifying an Offsite Dose Limit.^(3.1.2)
 - 1.1.1 Prior to issuance of this procedure, these items were located in Section 4 of the old ODCM.

2.0 <u>SCOPE</u>

2.1 This procedure is applicable to all station personnel that are qualified to perform activities as described and referenced in this procedure.

3.0 REFERENCES AND COMMITMENTS

3.1 <u>References</u>

- 3.1.1 40 CFR Part 190
- 3.1.2 1/2-ODC-3.03, ODCM: Controls for RETS and REMP Programs
- 3.1.3 1/2-ADM-1640, Control of the Offsite Dose Calculation Manual
- 3.1.4 1/2-ADM-0100, Procedure Writer's Guide
- 3.1.5 1/2-ADM-0101, Review and Approval of Documents

3.2 <u>Commitments</u>

- 3.2.1 Technical Specification 6.9.2f, Special Reports
- 3.2.2 NUREG-1301, Offsite Dose Calculation Manual Guidance: Standard Radiological
 Effluent Controls for Pressurized Water Reactors (Generic Letter 89-01, Supplement No.
 1)

4.0 <u>RECORDS AND FORMS</u>

- 4.1 <u>Records</u>
 - 4.1.1 Any calculation supporting ODCM changes shall be documented, as appropriate, by a retrievable document (e.g.; letter or calculation package) with an appropriate RTL number.

4.2 <u>Forms</u>

4.2.1 None

	Beaver Valley Power Station	Procedure N				
Title:		Unit:	1/2-ODC-2.04 Level Of Use:			
		1/2	General Skill Reference			
ODCM: 1	Information Related to 40 CFR 190	Revision:	Page Number:			
		0	4 of 6			
5.0 <u>P</u>	RECAUTIONS AND LIMITATIONS					
5.1 T	he Offsite Dose Limits used to show compliance to this pro	ocedure are as	s follows:			
5.1.1	ODCM Control 3.11.2.a; Liquid Effluents: ≤ 1.5 mrem mrem/quarter any Organ.	/quarter Total	Body or ≤ 5			
5.1.2	ODCM Control 3.11.2.b; Liquid Effluents: ≤ 3 mrem/y mrem/year any Organ.	ear Total Boc	ly or ≤ 10			
5.1.3	ODCM Control 3.11.2.2.a; Gas Effluent-Noble Gas: ≤ mrad/quarter Beta	5 mrad/quarte	er Gamma, or ≤ 10			
5.1.4	ODCM Control 3.11.2.2.b; Gas Effluents-Noble Gas: $\leq 10 \text{ mrad/year Gamma} \leq 20 \text{ mrad/year Beta}$					
5.1.5	ODCM Control 3.11.2.3.a; Gas Effluents-Particulates & Iodines: \leq 7.5 mrem/quarter any organ					
5.1.6	ODCM Control 3.11.2.3.b; Gas Effluents-Particulates & Iodines: ≤ 15 mrem/year any organ					
5.1.7	ODCM Control 3.11.4.1; All Fuel Cycle Sources: ≤ 25 mrem/year Total Body or any Organ, except the thyroid, which is limited to ≤ 75 mrem/year					
6.0 <u>A</u>	CCEPTANCE CRITERIA	-				
19	ny changes to this procedure shall contain sufficient justific aintain the level of radioactive effluent control required by 0, 10 CFR 50.36a, and Appendix I to 10 CFR 50, and not a liability of effluent dose or setpoint calculation. ^(3.2.2)	10 CER 20 1	202 10 CED Dort			
6.1.1	All changes to this procedure shall be prepared in accordance with 1/2-ADM-0100 ^(3.1.4) and 1/2-ADM-1640. ^(3.1.3)					
6.1.2	All changes to this procedure shall be reviewed and appr ADM-0101 ^(3.1.5) and 1/2-ADM-1640. ^(3.1.3)	oved in accor	dance with 1/2-			
70 DD	FDFOILISITES					

7.0 <u>PREREQUISITES</u>

7.1 The user of this procedure shall be familiar with ODCM structure and content.

8.0 <u>PROCEDURE</u>

8.1 Information Related To 40 CFR 190

8.1.1 CONTROL 3.11.4.1 requires that when the calculated doses associated with the effluent releases exceed twice the limits of ODCM CONTROL 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, the following shall be performed:

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ODCM: Information Related to 40 CFR 190	Revision: O	Page Number: 5 of 6

- 8.1.1.1 Calculations shall be made including direct radiation contributions from the units (including outside storage tanks, etc.) to determine whether the dose or dose commitment to any MEMBER OF THE PUBLIC from all facility releases of radioactivity and to radiation from uranium fuel cycle sources exceeds the limits of ≤ 25 mrem to the total body or any organ, except the thyroid, which is limited to ≤ 75 mrem for a calendar year.
 - 8.1.1.1.1 If any of these limits are exceeded, prepare and submit to the Commission within 30 days a Special Report pursuant to Technical Specification 6.9.2f.^(3.2.1) The following shall be included in the Special Report:
 - 8.1.1.1.1.1 Define the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the limits of ODCM CONTROL 3.11.4.1.
 - 8.1.1.1.2 Include the schedule for achieving conformance within the limits of ODCM CONTROL 3.11.4.1.
 - 8.1.1.1.3 Include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report.
 - 8.1.1.1.1.4 Describe levels of radiation and concentrations of radioactive material involved, and the cause of exposure levels or concentrations.
 - 8.1.1.1.5 If the estimated dose(s) exceeds the limits of ODCM CONTROL
 3.11.4.1, and if the release condition resulting in violation of 40 CFR
 Part 190 has not already been corrected, include a request for a variance in accordance with the provisions of 40 CFR Part 190.
 Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.

8.2 Inside The Site Boundary Radiation Doses

- 8.2.1 In regards to assessment of radiation doses (from Radioactive Effluents) to MEMBERS OF THE PUBLIC due to their activities inside the site boundary, the following is provided:
 - 8.2.1.1 A separate assessment of radiation doses from radioactive effluents to MEMBERS OF THE PUBLIC due to their activities inside the site boundary is generally not necessary because the exposure time for individuals not occupationally associated with the plant site is minimal in comparison to the exposure time considered for the dose calculation at or beyond the site boundary.

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le: DCM: Inf	formation Related to	40 CFR 190		Unit: 1/2	Level Of Use: General Skill Reference Page Number:
				0	6 of 6
8.2.1 8.2	MEMBER OI dose assessme for a MEMBE 2.1.2.1 This is used for than the THE PU miles N	F THE PUBLIC insi- ents for an offsite M ER OF THE PUBLIC verified by showing dose calculation at χ/Q dispersion para JBLIC would most 1	uidance for calculati de the site boundary EMBER OF THE PU C conducting activitie that the ground relea the site boundary (0. meter at the location ikely have the maxin W). A comparison of	is not need JBLIC is all es onsite. se χ/Q disp 352 miles 1 where a M num expos	ed because the lso assumed to be persion parameter NW) is greater IEMBER OF ure time (0-0.5
	χ/Q Used for Dose Calculation	X/Q Where a MEMBER OF Would Most Likely Exposure	THE PUBLIC Have the Maximum	χ/QRefe from 1/2-ODX	n
	Site Boundary 0.352 miles NW	Inside the Site Boundary 0-0.5 miles N	Inside the Site Boundary 0-0.5 miles NNW	See Attach	ument F
•	9.24E-5 sec/m ³	2.33E-5 sec/m ³	5.47E-5 sec/m ³	Table	2.2-4
	1.03E-4 sec/m ³	2.76E-5 sec/m ³	6.01E-5 sec/m ³	Table	22-5
	7.35E-5 sec/m ³	2.44E-5 sec/m ³	5.57E-5 sec/m ³	Table	22-7
	9.24E-5 sec/m ³	2.33E-5 sec/m ³	5.47E-5 sec/m ³	Table	22-8
	9.24E-5 sec/m ³	2.33E-5 sec/m ³	5.47E-5 sec/m ³	Table	2.2- 9
	7.35E-5 sec/m ³	2.44E-5 sec/m ³	5.57E-5 sec/m ³	Table 2	2.2-10
	L		L	L	

New: 1/2-ODC-3.01 Old: APPENDIX A & B

Beaver Valley Power Station

Unit 1/2

1/2-ODC-3.01

ODCM: Dispersion Calculational Procedure and Source Term Inputs

Document Owner Manager, Health Physics

Revision Number	0
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

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5.0 PRECAUTIONS AND LIMITATIONS 6.0 ACCEPTANCE CRITERIA	• • • • • • • • • • • • • • • • • • • •	
6.0 ACCEPTANCE CRITERIA 7.0 PREREQUISITES		
8.0 PROCEDURE		
8.1 Summary of Dispersion and Deposition Methodology		
8.2 Summary of Source Term Inputs		
8.2.1 Liquid Source Term Inputs		
8.2.2 Gaseous Source Term Inputs		
ATTACHMENT A BV-1 AND 2 RELEASE CONDITIONS		
ATTACHMENT B LIQUID SOURCE TERM INPUTS		
ATTACHMENT C GASEOUS SOURCE TERM INPUTS		

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ODCM: Dispersion Calculational Procedure and Source Term Inputs	Revision: O	Page Number: 3 of 12	

1.0 PURPOSE

- 1.1 This procedure contains the basic methodology that was used for calculating dispersion (χ/Q) and deposition (D/Q).
 - 1.1.1 Prior to issuance of this procedure, these items were located in Appendix A of the old ODCM.
- 1.2 This procedure also contains the input parameters to the various computer codes used by the Licensee and its subcontractors for determination of the liquid and gaseous source term mixes.
 - 1.2.1 Prior to issuance of this procedure, these items were located in Appendix B of the old ODCM.

2.0 <u>SCOPE</u>

2.1 This procedure is applicable to all station personnel (including subcontractors) that are qualified to perform activities as described and referenced in this procedure.

3.0 <u>REFEFERENCES AND COMMITMENTS</u>

3.1 <u>References</u>

- 3.1.1 NUS-2173, Development Of Terrain Adjustment Factors For Use At the Beaver Valley Power Station, For the Straight-Line Atmospheric Dispersion Model, NUS Corporation, June 1978
- 3.1.2 NUREG/CR-2919, XOQDOQ: Computer Program For The Meteorological Evaluation Of Routine Effluent Releases At Nuclear Power Stations, September, 1982
- 3.1.3 Regulatory Guide 1.23, Meteorological Measurement Program for Nuclear Power Plants
- 3.1.4 Regulatory Guide 1.111, Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents In Routine Releases From Light-Water-Coded Reactors, Revision 1, July 1977
- 3.1.5 NRC Gale Code,
- 3.1.6 SWEC LIQ1BB Code,
- 3.1.7 SWEC GAS1BB Code,
- 3.1.8 NUREG-1301, Offsite Dose Calculation Manual Guidance, Standard Radiological
 Effluent Controls for Pressurized Water Reactors (Generic Letter 89-01, Supplement No.
 1)
- 3.1.9 1/2-ADM-1640, Control of the Offsite Dose Calculation Manual

Decree V. II		
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3.1.10 1/2-ADM-0100, Procedure Writer's Guide	0	4 of 12
3.1.11 1/2-ADM-0101, Review and Approval of Documents		
3.2 <u>Commitments</u>		
3.2.1 None		
4.0 <u>RECORDS AND FORMS</u>		
4.1 <u>Records</u>		
4.1.1 Any calculation supporting generation of dispersion, deposes shall be documented, as appropriate, by a retrievable docur package) with an appropriate RTL number.	ition, or so nent (e.g.;]	urce term mixes letter or calculation
4.2 <u>Forms</u>		
4.2.1 None		
5.0 PRECAUTIONS AND LIMITATIONS		
5.1 This procedure contains the information that was previously con Appendix B of the previous BV-1 and 2 Offsite Dose Calculation	itained in A on Manual.	Appendix A and
5.1.1 In regards to this, the Tables that were transferred from App the appropriate ATTACHMENTS of this procedure will still an "A" or "B".		nd Appendix B to prefix denoting
6.0 <u>ACCEPTANCE CRITERIA</u>		
5.1 Any change to this procedure shall contain sufficient justification maintain the level of radioactive effluent control required by 10 (190, 10 CFR 50.36a and Appendix I to 10 CFR 50, and not adve reliability of effluent dose or setpoint calculation.		
6.1.1 All changes to this procedure shall be prepared in accordance and 1/2-ADM-1640. ^(3.1.9)	e with 1/2-	ADM-0100 ^(3.1.10)
6.1.2 All changes to this procedure shall be reviewed and approve ADM-0101 ^(3.1.1) and 1/2-ADM-1640. ^(3.1.9)	d in accord	ance with 1/2-
.0 <u>PREREQUISITES</u>		

.

7.1 The user of this procedure shall be familiar with ODCM structure and content.

Beaver Valley Power Station	Procedure Number: 1/2-ODC-3.01		
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8.0 PROCEDURE

8.1 <u>Summary of Dispersion and Deposition Methodology</u>

- 8.1.1 Annual average and grazing season average values of relative concentration (χ/Q) and deposition (D/Q) were calculated for continuous and intermittent gaseous releases of activity from the site according to the straight-line airflow (Gaussian) model described in RG-1.111.^(3.1.4)
 - 8.1.1.1 Undecayed and undepleted sector average χ/Q and D/Q values were obtained for each of sixteen 22.5-degree sectors at the site boundary and maximum individual receptors.
 - 8.1.1.2 For an elevated release, (i.e.; occurring at a height that is twice the height or more of a nearby structure) credit was taken for the effective release height which is comprised of the physical release height plus momentum plume rise minus the terrain height at a given receptor.
 - 8.1.1.3 A building wake correction factor was used to adjust calculations for ground-level releases.
 - 8.1.1.4 Airflow reversals were also accounted for by applying site-specific terrain recirculation factors for both ground and elevated releases at the site.^(3.1.1)
 - 8.1.1.5 The methodology employed in the calculation of intermittent release χ/Q and D/Q values is that described in NUREG/CR-2919.^(3.1.2)
- 8.1.2 The site continuous gaseous release points that have been evaluated include the following:
 - 8.1.2.1 PV-1/2: The Unit 1/2 Gaseous Waste/Process Vent attached to the Unit 1 natural draft cooling tower
 - 8.1.2.2 CV-1 and CV-2: The Unit 1 Rx Containment/SLCRS Vented the Unit 2 SLCRS Filtered Pathway
 - 8.1.2.3 VV-1 and VV-2: The Unit 1 Ventilation Vent and the Unit 2 SLCRS Unfiltered Pathway
 - 8.1.2.4 TV-2: The Unit 2 Turbine Building Vent
 - 8.1.2.5 CB-2: The Unit 2 Condensate Polishing Building Vent
 - 8.1.2.6 DV-2: The Unit 2 Decontamination Building Vent
 - 8.1.2.7 WV-2: The Unit 2 Gaseous Waste Storage Tank Vault Vent
- 8.1.3 The intermittent releases are from PV-1/2, VV-1, VV-2, CV-1 and CV-2.

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le:		Unit:	1/2-ODC-3.01 Level Of Use:		
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8.1.4	Only PV-1/2 was considered to be an elevated release with treated as ground level releases. A summary of the release locations is given in ATTACHMENT A.	all other i character	release points being istics and their		
8.1.5	Onsite meteorological data for the period January 1, 1976 t were used as input for the annual-average calculations.	hrough De	ecember 31, 1980		
8.1.5	5.1 The grazing season was represented by a six-month p October 31 for each year of the 5-year meteorologica season corresponds reasonably well with the growing	l data base	n May 1 through e. This grazing		
8.1.5	5.2 The data were collected according to guidance in NR in Section 2.3 of the BVPS-2 FSAR.	C RG-1.2	3 ^(3.1.3) as described		
8.1.5	5.3 The parameters used in the χ/Q and D/Q calculations direction, and ΔT as an indicator of atmospheric stabi (35 ft) and ΔT (150-35 ft) were used for all release po which required the use of 500 ft winds and ΔT (500-3 of the release height (510 ft).	lity. The just excer	lower level winds		
8.1.6	The annual average and grazing season χ/Q and D/Q values intermittent radioactive releases were calculated at the site R nearest vegetable garden, nearest milk cow, nearest milk go	oundary	nearest resident		
8.1.6	.1 In the case of the Process Vent releases, several of each evaluated in each downwind sector to determine the n values.	ch recepto naximum ;	r type were X/Q and D/Q		
8.1.6	m the radioactive 1/2-ODC-2.02.				
8.1.6.3 The continuous release annual average X/Q values at the special local Containment Vents, Ventilation Vents, Process Vent, Turbine Buildin Decontamination Building Vent, Waste Gas Storage Vault Vent, and Polishing Building Vent are given in ATTACHMENT F (Tables 2.2-2.2-10) of 1/2-ODC-2.02. Continuous release annual average X/Q's frelease points are also given at ten incremental downwind distances of the second secon			uilding Vents, and Condensate s 2.2-4 through O's for these same		
 8.1.6.4 Continuous release D/Q values for these same release points are given in ATTACHMENT K (Tables 2.3-21 through 2.3-27) of 1/2-ODC-2.02 for the 0-5 mile incremental distances, and in ATTACHMENT L (Tables 2.3-28 thr 2.3-34) of 1/2-ODC-2.02 for the special locations. 					
8.1.6.5 Due to their location adjacent to the Containment Building, the Decontamination Building and Gaseous Waste Storage Tank Vault χ/Q 's and D/Q's are the same as the Containment Vent χ/Q 's and D/Q's.					

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- 8.1.6.6 Likewise, the Turbine Building Vent χ/Q 's and D/Q's apply to the Condensate Polishing Building as well due to its location adjacent to the Turbine Building.
- 8.1.7 ATTACHMENT M (Tables 2.3-35 through 2.3-38) of 1/2-ODC-2.02 contain short term χ/Q values for batch releases originating from the Containment Vent, Ventilation Vent, and Process Vent releases respectively.
 - 8.1.7.1 The values in these tables are based on 32 hours per year of Containment and Ventilation Vent purges and 74 hours per year of Process Vent purges.
- 8.2 <u>Summary of Source Term Inputs</u>
 - 8.2.1 Liquid Source Term Inputs
 - 8.2.1.1 Inputs to the NRC Gale Code used for generation of BV-1 Liquid Source Term Mixes are shown in ATTACHMENT B (Table B:1a).
 - 8.2.1.2 Inputs to the SWEC LIQ1BB Code used for generation of BV-2 Liquid Source Term Mixes are shown in ATTACHMENT B (Table B:1b)
 - 8.2.2 Gaseous Source Term Inputs
 - 8.2.2.1 Inputs to the SWEC GAS1BB Code for generation of BV-1 Gaseous Source Term Mixes are shown in ATTACHMENT C (Table B:2a)
 - 8.2.2.2 Inputs to the SWEC GAS1BB Code for generation of BV-2 Gaseous Source Term Mixes are shown in ATTACHMENT C (Table B:2b)

					nber: /2-ODC-3.01	
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DCM: Dispersion Calculational Procedure and Source Term Inputs					Page Number: 8 of 12	
	BV-1 AN	ATTACHMENT A Page 1 of 1 ND 2 RELEASE CON		S		
		TABLE A:1			· .	
	VV-1 VENTILATION VENT (PAB EXHAUST)	CV-1 RX CONTAINMENT/ SLCRS VENT	PV-1/2 GASEOUS WASTE/PROCESS VENT		TV-2 TURBINE BUILDING VENT	
	VV-2 SLCRS UNFILTERED PATHWAY	CV-2 RX CONTAINMENT/ SLCRS FILTERED PATHWAY				
TYPE OF RELEASE	GROUND LEVEL	GROUND LEVEL	ELEVATED		GROUND LEVEL	
	Long Term And Short Term	Long Term And Short Term	Long Term And Short Term		Long Term And Short Term	
kelease Point Height m)	26	47	155		33	
adjacent Building leight (m)	19	44	155		33	
elative Location To djacent Structures	E. Side Of Primary Auxiliary Bldg	Top Center Of Containment Dome	Atop Cooling Tower		Turbine Building	
xit Velocity(m/sec)	NA	NA		9.4	NA	
temal Stack iameter (m)	NA	NA	025		NA	
uilding Cross- ectional Area (m ²)	1600	1600	NA		NA	
nge Frequency* ours/year)	32	32	74		NA	
nge Duration Is/telease)	8	8	NA		NA	
Applied to Short Term c	alculations only					
rs/release)		8	1	NA	NA	

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l'itle:	······	<u> </u>	· · · · · · · · · · · · · · · · · · ·		tī	Jnit:	Level	Of Use:	
ODCM· Disne	rsion Calcul	ational Proc	edure and Sou	rce Term In		1/2 Revision:		eral Skill Referen lumber:	
	DCM: Dispersion Calculational Procedure and Source Term Inputs ATTACHMENT B					0		9 of 12	
			ATTACHN Page 1					•	
		LIQU	JID SOURCE		UTS				
			TABLE	B:la					
INPUTS TO C	GALE CODI	E FOR GEN	ERATION OI	FBV-1 LIQ	UID SO	URCE 1	ERM	MIXES	
	BV	-1 PWR INP	JTS			VAL	UE		
Thormal Dowor	I aval (maga					274	6.000		
Thermal Power Plant Capacity		malloj				270	.800		
Mass Of Prima	ry Coolant (th					34	5.000		
Percent Fuel W Primary System	-					A	.120		
I mary bysich	. 1.0.00 MII I/a	er (erm)				Ľ			
Letdown Cation						6.000			
Number Of Steam Flo						1	3.000		
Mass Of Steam	-	•	(thousand lbs)			6.772			
Mass Of Liquid			• •			9	7.000	· .	
Total Mass Of Secondary Coolant (thousand lbs) Mass Of Water In Steam Generator (thousand lbs) Blowdown Rate (thousand lbs/hr) Primary To Secondary Leak Rate (lbs/day) Fission Product Carry-Over Fraction						29 3	6.000 1.000 3.900 0.000 .001		
Halogen Carry-	Over Fraction	.					.010		
Condensate De						0.000			
Radwaste Dilut	Radwaste Dilution Flow (thousand gpm)					22.500			
		BV-1	LIQUID WAST	TE INPUTS					
<u>.</u>				COLLECTION				NATION	
STREAM	FLOW RATE (gal/day)	FRACTION OF PCA	FRACTION DISCHARGE	TIME (days)	TIME (days)		FACTO Cs	OTHERS	
Shim Bleed	1.32E4	1.000	0.000	11.260	7.220	1E7	1E7	1E7	
Rate Equipment Drains	6.00E2	1.000	0.000	11.260	7.220	1E7	1E7	1E7	
Clean Waste Input	7.50E1	1.000	1.000	0.071	0.648	1E5	2E4	1E5	
Dirty Waste Input	1.35E3	0.035	1.000	0.071	0.648	1E5	2E4	1E5	
Blowdown	9.75E4	••	1.000	0.071	0.648	1E5	2E4	1E5	
Untreated	0.0								

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	Beaver	Valley]	Power St	ation		Proced	ure Numb	
Title:						<u> </u>		2-ODC-3.01
						Unit:	1	Level Of Use: General Skill Reference
ODCM: Dis	persion Calc	ulational P	rocedure and	Source Term	. T	Revisio		
				Source Lem	n inputs	0	1	Page Number: 10 of 12
			ATTA	CHMENT B		I		10 01 12
				ge 2 of 2				
		ŤŤ	QUID SOUR					
			Com 200k	CC IERM	INPUIS			
			TA	BLE B:1b				
INPUTS	TO SWEC LI	OIBB COL	E FOR GENE	RATION OF	TOV OT TO			E TERM MIXES
		RV.	2 PWR INPUT			SOID 2	UUKC	
	···· •						·	VALUE
The	rmal Power Le	vel (megawa	itte)					07// 000
Plan	t Capacity Fac	tor						2766.000
Mas	s Of Primary (Coolant (thou	isand lbs)					.800
Perc	ent Fuel With	Cladding De	fects					385.000
Prin	nary System Le	etdown Rate	(gnm)					.120
			(85)					57.000
Letd	lown Cation D	emineralizer	Flow					5 700
	nber Of Steam							5.700
Tota	I Steam Flow	(million lbs/h)r)					3.000 11.600
Mas	s Of Steam In	Each Steam	Generator (tho	usand lbs)				8.700
Mas	s Of Liquid In	Each Steam	Generator (tho	usand lbs)				100.000
								100.000
Tota	I Mass Of Sec	ondary Coola	ant (thousand l	bs)				2000.000
Mas	s Of Water In S	Steam Gener	ator (thousand	lbs)				298.000
Blov	vdown Rate (tł	ousand lbs/h	ır)					22.300
Prim	nary To Second	lary Leak Ra	te (lbs/day)	•		• •		100.000
Fissi	on Product Ca	rry-Over Fra	ction					.001
								.001
Halo	gen Carry-Ove	er Fraction						.010
	densate Demin							.700
Rady	waste Dilution	Flow (thouse	and gpm)					7.800
								·····
		~			_			
		B	V-2 LIQUID W					
	FI OW DATE	EDACTION		COLLECTIO		DE		MINATION
STREAM	FLOW RATE		FRACTION	TIME	TIME			<u>FORS</u>
UINDAW	(gal/day)	OF PCA	DISCHARGE	(hrs)	(hrs)	I	CsRb	OTHERS
Containment	40	1.000	1.0	25 5			•	
Sump	70	1.000	1.0	35.5	6.2	1E3	· 1E4	1E4
-			· · ·	•				
Auxiliary	200	0.100	1.0	35.5	6.2	1E3	1E4	1E4
Building Sump								

Sump	+0	1.000	1.0	35.5	6.2	1E3	1E4	1E4
Auxiliary Building Sump	200	0.100	1.0	35.5	6.2	1E3	IE4	1E4
Miscellaneous Sources	700	0.010	1.0	35.5	6.2	1E3	1E4	1E4
Rx Plant Samples	35	1.000	1.0	35.5	6.2	1E3	1E4	1E4
Lab Drains	400	0.002	1.0	35.5	6.2	1E3	1E4	1E4
Cond. Demin. Rinse Water	2685	1.1E-4	1.0	35.5	6.2	1E3	1E4	1E4
CVCS	60		1.0	1300	173	1E4	4E3	IE5
Turbine Bldg.Drains	,7200		1.0				••	••

Beaver Valley Power Station	Procedure Nu	Imber: 1/2-ODC-3.01
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	1/2	General Skill Reference
ODCM: Dispersion Calculational Procedure and Source Term Inputs	Revision:	Page Number:
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ATTACHMENT C		
Page 1 of 1		
GASEOUS SOURCE TERM INPUTS		
TABLE B:2a INPUTS TO SWEC GASIBB CODE FOR GENERATION OF BV-1 GASE	OUS SOUR	CE TERM MIXES
	0000000	
BV-1 PWR INPUTS		VALUE
Thermal Power Level (megawatts)		2766.000
Plant Capacity Factor		.800
Mass Of Primary Coolant (thousand lbs)		385.000
Percent Fuel With Cladding Defects		.120
Primary System Letdown Rate (gpm)		57.000
Letdown Cation Demineralizer Flow		5.700
Number Of Steam Generators		3.000
Total Steam Flow (million lbs/hr)		11.600
Mass Of Steam In Each Steam Generator (thousand lbs)		8.700
Mass Of Liquid In Each Steam Generator (thousand lbs) Total Mass Of Secondary Coolant (thousand lbs)		100.000
Mass Of Water In Steam Generator (thousand lbs)		2000.000
Blowdown Rate (thousand lbs/hr)		298.000
Primary To Secondary Leak Rate (lbs/day)		52.000
Fission Product Carry-Over Fraction		100.000
Halogen Carry-Over Fraction	·	.001 .010
Condensate Demineralizer Flow Fraction		0.000
Radwaste Dilution Flow (thousand gpm)		15.000
BV-1 GASEOUS WASTE INPUTS		VALUE
<u>There Is Not Continuous Stripping Of Full Letdown Flow</u> Hold Up Time For Xenon (days)		20.000
Hold Up Time For Krypton (days)		39.000
Primary Coolant Leak To Auxiliary Building (lb/day)		2.000
Auxiliary Building Leak Iod Auxiliary Building (10/day)		160.000
Gas Waste System Particulate Release Fraction		7.5E-3 0.000
Auxiliary Building Charcolodine Release Fraction		1.000
Auxiliary Building Particulate Release Fraction		1.000
Containment Volume (million cu-ft)		1.800
		2.000
Frequency Of Primary Coolant Degassing (times/yr)		
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day)		100.000
Frequency Of Primary Coolant Degassing (times/yr)		
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u>		100.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours)		100.000 2.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator		100.000 2.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)*		100.000 2.000 8.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction		100.000 2.000 8.000 0.010
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction		100.000 2.000 8.000 0.010 4.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction Steam Leak To Turbine Building (lbs/hr)		100.000 2.000 8.000 0.010 4.000 1.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent		100.000 2.000 8.000 0.010 4.000 1.000 1.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent Fraction Iodine Released From Main Condensate Air Ejector		100.000 2.000 8.000 0.010 4.000 1.000 1.000 1700.000
Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u> Containment Atmosphere Cleanup Rate (thousand cfm) Purge Time Of Containment (hours) <u>There Is Not A Condensate Demineralizer</u> Iodine Partition Factor (gas/liq) In Steam Generator Frequency Of Containment Building High Vol Purge (times/yr)* Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent		100.000 2.000 8.000 0.010 4.000 1.000 1.000 1700.000 0.000

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Procedure N	
L Init:	1/2-ODC-3.01
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Revision:	Page Number:
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<u>T</u>	<u> </u>
JUS SOUR	CE TERM MIXES
	VALUE
	2766.000
	.800
	385.000
	.120
	57.000
	5.700
	3.000
	11.600
	8.700
	100.000
	2000.000
	298.000
	22.300
	100.000
	.001
	.010
	.700
	7.800
	VALUE
	46.000
	45.800
	2.570
	160.000
	7.5E-3
	0.000
	0.100
	0.010
	1.800
	2.000 100.000
	100.000
	20.000
	8.000
	0.000
	0.010
	4.000
	1.000
	1.000
	1700.000
	/1/4/1
	0.000 0.270
	Unit: 1/2 Revision:

New: 1/2-ODC-3.02 Old: APPENDIX D

Unit 1/2

1/2-ODC-3.02

ODCM: Bases For ODCM Controls

Document Owner Manager, Radiation Protection

Revision Number	1
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.02
Title:	Unit	Level Of Use:
ODCM: Bases For ODCM Controls	1/2	General Skill Reference
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3.0 REFERENCES AND COMMITMENTS		3
3.1 References		3
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5.0 PRECAUTIONS AND LIMITATIONS		5
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ATTACHMENT A BASES FOR ODCM CONTROLS: INSTR	IMENTATIO	N 6
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ATTACHMENT E BASES FOR ODCM CONTROLS: RADIO	LOGICAL EN	IVIRONMENTAL
MONITORING PROGRAM (REMP)		13
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Unit: <u>1/2</u> Revision: 1	Level Of Use: General Skill Reference Page Number: 3 of 13	
	Unit: 1/2	

1.0 <u>PURPOSE</u>

- 1.1 This procedure contains the Bases for the ODCM Controls that were transferred from the Bases Section of the Technical Specification per Unit 1/2 Amendments 1A-188/2A-70, and in accordance with Generic Letter 89-01 and NUREG-1301 (Generic Letter 89-01, Supplement No. 1).^(3.1.5, 3.2.10)
 - 1.1.1 Prior to issuance of this procedure, these items were located in Appendix D of the old ODCM.
- 1.2 This procedure also contains the Bases for the ODCM Controls (for Radiation Monitoring Instrumentation) that were duplicated from the Bases Section of the Technical Specification per Unit 1/2 Amendments 1A-246/2A-124, and in accordance with NUREG-1431.^(3.1.6, 3.2.11)
- 1.3 This procedure also contains the Bases for the ODCM Controls (for Liquid Holdup Tank Activity Limits and for Gas Decay/Storage Tank Activity Limits) that were transferred from the Bases Section of the Technical Specification per Unit 1/2 Amendments 1A-250/2A-130, and in accordance with NUREG-1431.^(3.1.7, 3.2.11)

2.0 <u>SCOPE</u>

2.1 This procedure is applicable to all station personnel that are qualified to perform activities as described and referenced in this procedure.

3.0 REFERENCES AND COMMITMENTS

3.1 <u>References</u>

- 3.1.1 1/2-ODC-2.01, ODCM: Liquid Effluents
- 3.1.2 1/2-ODC-2.02, ODCM: Gaseous Effluents
- 3.1.3 1/2-ODC-3.03, ODCM: Controls for RETS and REMP Programs
- 3.1.4 1/2-ADM-1640, Control of the Offsite Dose Calculation Manual
- 3.1.5 Unit 1/2 Technical Specification 6.8.6, including Amendments 1A-188/2A-70 (LAR 1A-175/2A-37), Implemented August 7, 1995
- 3.1.6 Unit 1/2 Technical Specification 3.3.3.1, including Amendments 1A-246/2A-124 (LAR 1A-287/2A-159), Implemented April 11, 2002
- 3.1.7 Unit 1/2 Technical Specifications 3.11.1.4, 3.11.2.5 and 6.8.6, including Amendments 1A-250/2A-130 (LAR 1A-291/2A-163), Implemented August 7, 2002
- 3.1.8 1/2-ADM-0100, Procedure Writer's Guide
- 3.1.9 1/2-ADM-0101, Review and Approval of Documents

	Beaver Valley Power Station	Procedure N	
Fitle: ODCM: E	Bases For ODCM Controls	Unit: 1/2 Revision:	1/2-ODC-3.02 Level Of Use: General Skill Reference Page Number: 4 of 13
3.2 <u>C</u>	ommitments		4 0(13
3.2.1	10 CFR Part 20		· · ·
3.2.2	10 CFR Part 50		·
3.2.3	40 CFR Part 141		
3.2.4	40 CFR Part 190		
3.2.5	Regulatory Guide 1.109, Calculation Of Annual Dose Of Reactor Effluents For The Purpose Of Evaluating Appendix I, Revision 1, October, 1977	es To Man From Compliance Wi	Routine Releases th 10 CFR Part 50,
3.2.6	Regulatory Guide 1.111, Methods For Estimating Atr Dispersion of Gaseous Effluents In Routine Releases Reactors, Revision 1, July, 1977	nospheric Trans From Light-Wa	port And ter-Cooled
3.2.7	Regulatory Guide 1.113, Estimating Aquatic Dispersi And Routine Reactor Releases For The Purpose Of In 1977	on Of Effluents nplementing Ap	From Accidental pendix I, April,
3.2.8	NUREG-0133, Preparation of Radiological Effluent 7 Nuclear Power Plants, October 1978	Fechnical Specif	ications for
3.2.9	NUREG-0737, Clarification of TMI Action Plan Requ	uirements, Octol	ber, 1980
3.2.10	NUREG-1301, Offsite Dose Calculation Manual Guid Effluent Controls For Pressurized Water Reactors (Ge No. 1)	dance. Standard eneric Letter 89-	Radiological 01, Supplement
3.2.11	NUREG-1431, Standard Technical Specifications - W	estinghouse Pla	nts Specifications
4.0 <u>RF</u>	ECORDS AND FORMS		
1.1 <u>Re</u>	cords		анананан алар 1997 - Салан Алар 1997 - Салан Алар
4.1.1	Any calculation supporting ODCM changes shall be d retrievable document (eg; letter or calculation package number.	locumented, as a a b) with an approp	ppropriate, by a priate RTL

4.2 <u>Forms</u>

4.2.1 None

Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.02
Title: ODCM: Bases For ODCM Controls	Unit: 1/2	Level Of Use: General Skill Reference Page Number: 5 of 13

5.0 PRECAUTIONS AND LIMITATIONS

5.1 The numbering of each specific ODCM Bases contained in this procedure does not appear to be sequential. This is intentional, as all ODCM Bases numbers remained the same when they were transferred from the Technical Specifications. This was done in an effort to minimize the amount of plant procedure changes and to eliminate any confusion associated with numbering changes.

6.0 ACCEPTANCE CRITERIA

- 6.1 Any change to this procedure shall contain sufficient justification that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appenidx I to 10 CFR 50, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculation.^(3.2.10)
 - 6.1.1 All changes to this procedure shall be prepared in accordance with 1/2-ADM-0100^(3.1.8) and 1/2-ADM-1640.^(3.1.4)
 - 6.1.2 All changes to this procedure shall be reviewed and approved in accordance with 1/2-ADM-0101^(3.1.9) and 1/2-ADM-1640.^(3.1.4)

7.0 PREREQUISITES

7.1 The user of this procedure shall be familiar with ODCM structure and content.

8.0 PROCEDURE

- 8.1 See ATTACHMENT A for a complete description of Bases for ODCM Controls associated with Instrumentation.
- 8.2 See ATTACHMENT B for a complete description of Bases for ODCM Controls associated with Liquid Effluents.
- 8.3 See ATTACHMENT C for a complete description of Bases for ODCM Controls associated with Gaseous Effluents.
- 8.4 See ATTACHMENT D for a complete description of Bases for ODCM Controls associated with Total Dose.
- 8.5 See ATTACHMENT E for a complete description of Bases for ODCM Controls associated with the Radiological Environmental Monitoring Program (REMP).

-END-

}	Beaver Valley Power Station		Procedure Number: 1/2-ODC-3.02		
Title: ODCM: Ba	ses For ODCM Controls	Unit: 1/2	Level Of Use: General Skill Reference		
	·	Revision: 1	Page Number: 6 of 13		
	ATTACHMENT A	L	<u> </u>		
	Page 1 of 1				
	BASES FOR ODCM CONTROLS: INSTRUM	MENTATION	L ine t		
3/4.3.3.1	RADIATION MONITORING INSTRUMENTATION				
	The OPERABILITY of the radiation monitoring char levels are continually measured in the areas served by alarm or automatic action is initiated when the radiati and 3) sufficient information is available on selected assess these variables following an accident. This can	the individue on level trip s plant paramet	al channels; 2) the setpoint is exceeded; ters to monitor and		
24.2.2.0	recommendations of NUREG-0737. ^(3.2.9)				
3/4.3.3.9	RADIOACTIVE LIQUID EFFLUENT MONITORIN	IG INSTRUM	<u>TENTATION</u>		
	The radioactive liquid effluent instrumentation is pro- applicable, the releases of radioactive materials in liquid potential releases of liquid effluents. The alarm/trip s be calculated in accordance with Section 1 of this man will occur prior to exceeding the limits of 10 CFR Par	uid effluents o etpoints for the number of the second seco	during actual or hese instruments shall that the alarm/trip		
1 a a 1 a	use of this instrumentation is consistent with the requirementation of the constant of the con	irements of G	PERABILITY and eneral Design		
3/4.3.3.10	use of this instrumentation is consistent with the requ	irements of G t 50. ^(3.2.1, 3.2.2)	eneral Design		
3/4.3.3.10	use of this instrumentation is consistent with the required Criteria 60, 63, and 64 of Appendix A to 10 CFR Part <u>RADIOACTIVE GASEOUS EFFLUENT MONITOR</u> The radioactive gaseous effluent instrumentation is prapplicable, the releases of radioactive materials in gas potential releases of gaseous effluents. The alarm/trips shall be calculated in accordance with Section 2 of this alarm/trip will occur prior to exceeding the limits of 1 instrumentation also includes provisions for monitoring	irements of G t 50. ^(3.2.1, 3.2.2) RING INSTRU rovided to mo seous effluents o setpoints for is manual to e 0 CFR Part 2 ng (and control	eneral Design <u>UMENTATION</u> nitor and control, as s during actual or these instruments ensure that the 0. This colling) the		
3/4.3.3.10	use of this instrumentation is consistent with the required Criteria 60, 63, and 64 of Appendix A to 10 CFR Part <u>RADIOACTIVE GASEOUS EFFLUENT MONITOF</u> The radioactive gaseous effluent instrumentation is pr applicable, the releases of radioactive materials in gas potential releases of gaseous effluents. The alarm/trip shall be calculated in accordance with Section 2 of this	irements of G t 50. ^(3.2.1, 3.2.2) RING INSTRU rovided to mo seous effluents o setpoints for is manual to e 0 CFR Part 2 ng (and contro n the waste ga s consistent w	UMENTATION UMENTATION mitor and control, as s during actual or these instruments msure that the 0. This billing) the as holdup system. vith the requirements		
3/4.3.3.10	use of this instrumentation is consistent with the required Criteria 60, 63, and 64 of Appendix A to 10 CFR Part <u>RADIOACTIVE GASEOUS EFFLUENT MONITOR</u> The radioactive gaseous effluent instrumentation is prapicable, the releases of radioactive materials in gas potential releases of gaseous effluents. The alarm/trips shall be calculated in accordance with Section 2 of this alarm/trip will occur prior to exceeding the limits of 1 instrumentation also includes provisions for monitoring concentrations of potentially explosive gas mixtures in The OPERABILITY and use of this instrumentation is	irements of G t 50. ^(3.2.1, 3.2.2) RING INSTRU rovided to mo seous effluents o setpoints for is manual to e 0 CFR Part 2 ng (and contro n the waste ga s consistent w	UMENTATION UMENTATION mitor and control, as s during actual or these instruments msure that the 0. This billing) the as holdup system. vith the requirements		
3/4.3.3.10	use of this instrumentation is consistent with the required Criteria 60, 63, and 64 of Appendix A to 10 CFR Part <u>RADIOACTIVE GASEOUS EFFLUENT MONITOR</u> The radioactive gaseous effluent instrumentation is prapicable, the releases of radioactive materials in gas potential releases of gaseous effluents. The alarm/trips shall be calculated in accordance with Section 2 of this alarm/trip will occur prior to exceeding the limits of 1 instrumentation also includes provisions for monitoring concentrations of potentially explosive gas mixtures in The OPERABILITY and use of this instrumentation is	irements of G t 50. ^(3.2.1, 3.2.2) RING INSTRU rovided to mo seous effluents o setpoints for is manual to e 0 CFR Part 2 ng (and contro n the waste ga s consistent w	UMENTATION UMENTATION mitor and control, as s during actual or these instruments msure that the 0. This billing) the as holdup system. vith the requirements		

ODCM: Bases For ODCM Controls

Title:

Procedure No	amber: 1/2-ODC-3.02
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ATTACHMENT B Page 1 of 2 BASES FOR ODCM CONTROLS: LIQUID EFFLUENTS

3/4.11.1.1 LIQUID EFFLUENT CONCENTRATION

This CONTROL is provided to ensure that the concentration of radioactive materials released in Liquid waste effluents from the site to unrestricted areas will be less than 10 times the EC's specified in 10 CFR Part 20, Appendix B (20.1001-20-2401), Table 2, Column 2. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will result in exposure within (1) the Section II.A design objectives of Appendix I, 10 CFR Part 50, to an individual and (2) the limits of 10 CFR Part 20.1302 to the population. The concentration limit for dissolved or entrained noble gases is based upon the assumption that Xe-135 is the controlling radioisotope and its MPC in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

3/4.11.1.2 LIQUID EFFLUENT DOSE

This CONTROL is provided to implement the requirements of Sections II.A, III.A, and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation implements the guides set forth in Section II.A of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable." Also, for fresh water sites with drinking water supplies which can be potentially affected by plant operations, there is reasonable assurance that the operation of the facility will not result in radionuclide concentrations in the finished drinking water that are in excess of the requirements of 40 CFR 141. The dose calculations in the procedure 1/2-ODC-2.01 implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in procedure 1/2-ODC-2.01 for calculating the doses due to the actual release rates of radioactive materials in liquid effluents are consistent with the methodology provided in Regulatory Guide 1.109, and Regulatory Guide 1.113. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.113. (3.1.1, 3.2.2, 3.2.3, 3.2.5, 3.2.7, 3.2.8)

This CONTROL applies to the release of liquid effluents for Beaver Valley Power Station, Unit No. 1 or Unit No. 2. These units have shared radwaste treatment systems, the liquid effluents from the shared system are proportioned among the units sharing that system.

4	Beaver Valley Power Station	Procedure Nu	
Title:	es For ODCM Controls	Unit: <u>1/2</u> Revision: 1	1/2-ODC-3.02 Level Of Use: General Skill Reference Page Number: 8 of 13
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3/4.11.1.4	The CONTROL that the appropriate portions of this s provides assurance that the releases of radioactive ma kept "as low as is reasonably achievable." This speci requirements of 10 CFR Part 50.36a, General Design 10 CFR Part 50 and design objective given in Section 50. The specified limits governing the use of appropri- treatment system were specified as a suitable fraction forth in Section II.A of Appendix I, 10 CFR Part 50, f specification applies to Beaver Valley Power Station, LIQUID HOLDUP TANKS	aterials in liqu fication imple Criterion 60 II.D of Apperiate portions of the dose d for liquid effl	id effluents will be ements the of Appendix A to endix I to 10 CFR Part of the liquid radwaste esign objectives set uents. This
<i>3</i> , 4 , 1 1, 1 , 4	Restricting the quantity of radioactive material contain assurance that in the event of an uncontrolled release concentrations would be less than the limits of 10 CF. Column 2, at the nearest potable water supply and the unrestricted area.	of the tanks' of R Part 20, Ap	contents, the resulting pendix B, Table 2,
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ODCM: Bases For ODCM Controls

Title:

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ATTACHMENT C Page 1 of 3 BASES FOR ODCM CONTROLS: GASEOUS EFFLUENTS

3/4.11.2.1 GASEOUS EFFLUENT DOSE RATE

This CONTROL is provided to ensure that the dose at anytime at the site boundary from gaseous effluents from all units on the site will be within the annual dose limits of 10 CFR Part 20 for unrestricted areas. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II, Column 1. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an unrestricted area, either within or outside the site boundary, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the site boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the site boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the site boundary to \leq 500 mrem/year to the total body or to \leq 3,000 mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background of a child via the inhalation pathway $to \le 1,500 \text{ mrem/year.}^{(3.2.1)}$

3/4.11.2.2 DOSE, NOBLE GASES

This CONTROL is provided to implement the requirements of Sections II.B, III.A, and IV.A of Appendix I, 10 CFR Part 50. The CONTROL implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the release of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable." The Surveillance Requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in procedure 1/2-ODC-2.02 for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents are consistent with the methodology provided in Regulatory Guide 1.109, and Regulatory Guide 1.111. The equations in procedure 1/2-ODC-2.02 are provided for determining the air doses at the exclusion area boundary, and are based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111. This specifications applies to the release of gaseous effluents from Beaver Valley Power Station, Unit No. 1 or Unit No. 2.^(3,1,2,3,2,2,3,2,5,3,2,6,3,2,8)

ODCM: Bases For ODCM Controls

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ATTACHMENT C

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BASES FOR ODCM CONTROLS: GASEOUS EFFLUENTS

3/4.11.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM AND RADIONUCLIDES OTHER THAN NOBLE GASES

This CONTROL is provided to implement the requirements of Sections II.C, III.A, and IV.A of Appendix I, 10 CFR Part 50. The CONTROLS are the guides set forth in Section II.C of Appendix I.^(3.2.2)

The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." The calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The calculational methods in procedure 1/2-ODC-2.02 are for calculating the doses due to the actual release rates of the subject materials are consistent with the methodology provided in Regulatory Guide 1.109, and Regulatory Guide 1.111. These equations also provide for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for radioiodines, radioactive material in particulate form, and radionuclides other than noble gases are dependent on the existing radionuclide pathways to man, in the unrestricted area. The pathways which are examined in the development of these calculations are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto vegetation with subsequent consumption by man, 3) deposition onto grassy areas where milk animals and meat producing animals graze with consumption of the milk and meat by man, and 4) deposition on the ground with subsequent exposure of man. This CONTROL applies to radioactive material in particulate form and radionuclides other than noble gases released from Beaver Valley Power Station, Unit No. 1 or Unit No.2. (3.1.2, 3.2.2, 3.2.6, 3.2.7) 5.2.6, 3.2.7)

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Procedure No	umber: 1/2-ODC-3.02
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ATTACHMENT C Page 3 of 3 BASES FOR ODCM CONTROLS: GASEOUS EFFLUENTS

3/4.11.2.4 GASEOUS RADWASTE TREATMENT SYSTEM

The CONTROL that the appropriate portions of these systems be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable." This specification implements the requirements of 10 CFR Part 50.36a, General Design Criterion 60 of Appendix A to 10 CFR Part 50, and design objective Section II.D of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the systems were specified as a suitable fraction of the dose design objectives set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents. This specification applies to gaseous radwaste from Beaver Valley Power Station, Unit No. 1 or Unit No. 2.

3/4.11.2.5 BV-1 GASEOUS WASTE STORAGE TANKS

Restricting the quantity of radioactivity contained in each gas storage tank provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting total body exposure to an individual located at the nearest exclusion area boundary for two hours immediately following the onset of the release will not exceed 0.5 rem. The specified limit restricting the quantity of radioactivity contained in each gas storage tank was specified to ensure that the total body exposure resulting from the postulated release remained a suitable fraction of the reference value set forth in 10 CFR 100.11 (a)(1).

3/4.11.2.5 BV-2 GASEOUS WASTE STORAGE TANKS

Restricting the quantity of radioactivity contained in any connected group of gaseous waste storage tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting total body exposure to an individual located at the nearest exclusion area boundary for two hours immediately following the onset of the release will not exceed 0.5 rem. The specified limit restricting the quantity of radioactivity contained in any connected group of gaseous waste storage tanks was specified to ensure that the total body exposure resulting from the postulated release remained a suitable fraction of the reference value set forth in 10 CFR 100.11(a)(1). The curie content limit is applied individually to each gaseous waste storage tank and collectively to the number of unisolated gaseous waste storage tanks.

ODCM: Bases For ODCM Controls

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ATTACHMENT D Page 1 of 1 BASES FOR ODCM CONTROLS: TOTAL DOSE

3/4.11.4 <u>TOTAL DOSE</u>

This CONTROL is provided to meet the dose limitations of 40 CFR Part 190 that have been incorporated into 10 CFR Part 20 by 46 FR 18525. The CONTROL requires the preparation and submittal of a Special Report whenever the calculated doses due to releases of radioactivity and to radiation from uranium fuel cycle sources exceed 25 mrems to the whole body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems. For sites containing up to 4 reactors, it is highly unlikley that the resultant dose to a MEMBER OF THE PUBLIC will exceed the dose limits of 40 CFR Part 190 if the individual reactors remain within twice the dose design objectives of Appendix I, and if direct radiation doses from the units (including outside storages tanks, etc.) are kept small. The Special Report will describe a course of action that should result in the limitation of the annual dose to a MEMBER OF THE PUBLIC to within the 40 CFR Part 190 limits. For the purposes of the Special Report, it may be assumed that the dose commitment to the MEMBER OF THE PUBLIC from other uranium fuel cycle sources is negligible, with the exception that dose contributions from other nuclear fuel cycle facilities at the same site or within a radius of 5 miles must be considered. If the dose to any MEMBER OF THE PUBLIC is estimated to exceed the requirements of 40 CFR Part 190, the Special Report with a request for a variance (provided the release conditions resulting in violation of 40 CFR Part 190 have not already been corrected), in accordance with the provisions of 40 CFR 190.11 and 10 CFR 20.405c, is considered to be a timely request and fulfills the requirements of 40 CFR Part 190 until NRC staff action is completed. The variance only relates to the limits of 40 CFR Part 190, and does not apply in any way to the other requirements for dose limitation of 10 CFR Part 20, as addressed in ODCM CONTROL 3.11.1.1 and 3.11.2.1. An individual is not considered a MEMBER OF THE PUBLIC during any period in which he/she is engaged in carrying out any operation that is part of the nuclear fuel cycle.^(3.1.3, 3.2.1, 3.2.2, 3.2.4)

ODCM: Bases For ODCM Controls

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BASES FOR ODCM CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

3/4.12.1 MONITORING PROGRAM

The radiological monitoring program required by this CONTROL provides measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of MEMBER(S) OF THE PUBLIC resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The initially specified monitoring program will be effective for at least the first 3 years of commercial operation. Following this period, program changes may be initiated based on operational experience.

The detection capabilities required by ODCM Control 3.12.1, Table 4.12-1 are state-ofthe-art for routine environmental measurements in industrial laboratories. The LLD's for drinking water meet the requirements of 40 CFR 141.^(3.1.3, 3.2.3)

3/4.12.2 LAND USE CENSUS

ODCM CONTROL 3.12.2 is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring programs are made if required by the results of this census. The best survey information from the door-to-door survey, aerial survey, or by consulting with local agriculture authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. Restricting the census to gardens of greater than 500 square feet provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/year) of leafy vegetables assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were used: 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/square meter.^(3.1.3, 3.2.2)

3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

The ODCM CONTROL 3.12.3 for participation in an Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of a quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.^(3.1.3)

New: 1/2-ODC-3.03 Old: APPENDIX C & E

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Unit 1/2

1/2-ODC-3.03

ODCM: Controls for RETS and REMP Programs

Document Owner Manager, Radiation Protection

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Level Of Use	General Skill Reference
Safety Related Procedure	Yes

	er Valley Powe	r Station	Procedure N		
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1.0 <u>PURPOSE</u>

- 1.1 This procedure includes selected Definitions and Tables as delineated in Section 1 of the Technical Specifications and selected Applicability and Surveillance Requirement statements as delineated in Section 3/4 of the Technical Specifications.
 - 1.1.1 Prior to issuance of this procedure, these items were located in Appendix C of the old ODCM, and were added to this procedure for reference purposes, even though they are currently described in the Technical Specifications.
- 1.2 This procedure contains the controls for the Radiological Effluent Technical Specification (RETS) that were transferred from the Technical Specifications per Unit 1/2 Amendments 1A-188/2A-70, and in accordance with Generic Letter 89-01 and NUREG-1301.^(3.2.10)
 - 1.2.1 Prior to issuance of this procedure, these items were located in Appendix C of the old ODCM.
- 1.3 This procedure contains the reporting requirements for the Annual Radioactive Effluent Release Report and the Annual Radiological Environmental Report that were transferred from the Technical Specifications per Unit 1/2 Amendments 1A-188/2A-70 and in accordance with Generic Letter 89-01 and NUREG-1301.^(3.2.10)
 - 1.3.1 Prior to issuance of this procedure, these items were located in Appendix E of the old ODCM.
- 1.4 This procedure contains the controls for Radiation Monitoring Instrumentation that were transferred from the Technical Specification per Unit 1/2 Amendments 246/124, and in accordance with NUREG-1431. ^(3.2.11)
- 1.5 This procedure contains the controls for Liquid Holdup Tank Activity Limits and for Gas Decay/Storage Tank Activity Limits that were transferred from the Technical Specification per Unit 1/2 Amendment 250/130, and in accordance with NUREG-1431.^(3.1.6, 3.2.11)

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2.0 <u>SCOPE</u>

2.1 This procedure is applicable to all station personnel that are qualified to perform activities as described and referenced in this procedure.

3.0 REFERENCES AND COMMITMENTS

3.1 <u>References</u>

- 3.1.1 1/2-ODC-2.01, ODCM: Liquid Effluents
- 3.1.2 1/2-ODC-2.02, ODCM: Gaseous Effluents
- 3.1.3 1/2-ODC-3.02, ODCM: Bases for ODCM Controls

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3.1.4		ndments 1A-1	<u>4 of 75</u> 88/2A-70 (LAR 1A-		
3.1.5	Unit 1/2 Technical Specification 3.3.3.1, including Am 1A-287/2A-159) Implemented April 11, 2002	endments 1A	-246/2A-142 (LAR		
3.1.6	Unit 1/2 Technical Specification 3.11.1.4, 3.11.2.5, 6.8 Amendments 1A-250/2A-130 (LAR 1A-291/2A-163) I	.6 and 6.9.3, i mplemented A	ncluding August 7, 2002		
3.1.7					
3.1.8	1/2-ADM-0100, Procedure Writer's Guide				
3.1.9	1/2-ADM-0101, Review and Approval of Documents				
3.1.10	CR 981489, ODCM Table 4.11-2 Row A (Waste Gas S 001, Revise Appendix C of the ODCM (Table 4.11-2) t and when tritium samples are to be obtained for GWST	o add clarifica	Discharge). CA- ation as to where		
3.1.11	CR 981490, ODCM Table 4.11-2 Note e, and Related C Procedures. CA-001, Revise Appendix C of the ODCM specify the proper tritium sample point.	Chemistry Dep 1 (Table 4.11-	partment 2, Note e) to		
3.1.12	CR 993021, Apparent failure to test RM-1DA-100 trip to No ODCM changes are required for this CR.	function as rec	quired by ODCM.		
3.1.13	CR 001682, ODCM Action 28 Guidance. CA-002, Rev (Table 3.3-13, Action 28) to differentiate actions associa Flow Rate Monitors vs. Sample Flow Rate Monitors.	rise Appendix ated with Inop	C of the ODCM erable Process		
3.1.14	CR 02-05711, TS and ODCM changes not reflected in 1 CA-001, Revise 1/2-ODC-3.03 to add a requirement for notification of pending ODCM changes.	OM.54.3.L5	Surveillance Log. ation groups		
3.2 <u>C</u>	ommitments		. · · ·		
3.2.1	10 CFR Part 20				
3.2.2	10 CFR Part 50				
3.2.3	40 CFR Part 141				
3.2.4	40 CFR Part 190				
3.2.5	Regulatory Guide 1,109, Calculation Of Annual Descert		· · ·		

3.2.5 Regulatory Guide 1.109, Calculation Of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purpose Of Evaluating Compliance With 10 CFR Part 50, Appendix I, Revision 1, October 1977

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- 3.2.6 Regulatory Guide 1.111, Methods For Estimating Atmospheric Transport And Dispersion Of Gaseous Effuents In Routine Releases From Light-Water-Cooled Reactors, Revision 1, July 1977
- 3.2.7 Regulatory Guide 1.113, Estimating Aquatic Dispersion Of Effluents From Accidental And Routine Reactor Releases For The Purpose Of Implementing Appendix I, April 1977
- 3.2.8 NUREG-0133, Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, October 1978
- 3.2.9 NUREG-0737, Clarification of TMI Action Plan Requirements, October 1980
- 3.2.10 NUREG-1301, Offsite Dose Calculation Manual Guidance; Standard Radiological Effluent Controls For Pressurized Water Reactors (Generic Letter 89-01, Supplement No. 1)
- 3.2.11 NUREG-1431, Standard Technical Specifications Westinghouse Plants Specifications

4.0 RECORDS AND FORMS

4.1 <u>Records</u>

4.1.1 Any calculation supporting ODCM changes shall be documented, as appropriate, by a retrievable document (e.g.; letter or calculation package) with an appropriate RTL number.

4.2 <u>Forms</u>

4.2.1 None

5.0 PRECAUTIONS AND LIMITATIONS

- 5.1 The numbering of each specific ODCM Control, ODCM Surveillance Requirement and ODCM Table contained in this procedure does not appear to be sequential. This is intentional, as all ODCM Control, ODCM Surveillance Requirement and ODCM Table numbers remained the same when they were transferred from the Technical Specifications. This was done in an effort to minimize the amount of plant procedure changes and to eliminate any confusion associated with numbering changes.
- 5.2 The numbering of each specific ODCM Report contained in this procedure does not appear to be sequential. This is intentional, as all ODCM Report numbers remained the same when they were transferred from the Technical Specifications. This was done in an effort to minimize the amount of plant procedure changes and to eliminate any confusion associated with numbering changes.

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6.0 <u>ACCEPTANCE CRITERIA</u>

- 6.1 Any change to this procedure shall contain sufficient justification that the charge will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR 50, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculation.^(3.2.10)
 - 6.1.1 All changes to this procedure shall be prepared in accordance with 1/2-ADM-0100^(3.1.8) and 1/2-ADM-1640.^(3.1.7)
 - 6.1.2 Pending changes to this procedure shall be provided to applicable station groups. For example, <u>IF</u> Control 3.11.1.1 is being changed, <u>THEN</u> the proposed changes shall be provided to the applicable station groups (i.e.; owner of the procedures), identified in the MATRIX of ODCM procedure 1/2-ODC-1.01. This will allow the station groups to revise any affected procedures concurrent with the ODCM change.^(3.1.14)
 - 6.1.3 All changes to this procedure shall be reviewed and approved in accordance with 1/2-ADM-0101^(3.1.9) and 1/2-ADM-1640.^(3.1.7)

7.0 PREREQUISITES

7.1 The user of this procedure shall be familiar with ODCM structure and content.

8.0 <u>PROCEDURE</u>

- 8.1 See ATTACHMENT A for a Table of Operational Modes and a Table of Frequency Notation.
- 8.2 See ATTACHMENT B for a list of defined terms used throughout the ODCM.
- 8.3 See ATTACHMENT C thru ATTACHMENT S for a complete description of all ODCM Controls.
- 8.4 See ATTACHMENT T for a description of the Annual Report required by the REMP Controls.
- 8.5 See ATTACHMENT U for a description of the Annual Report required by the RETS Controls.

- END -

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ATTACHMENT A Page 1 of 2							
ODCM CON	ITROLS: OPERATIC	NAL MODES AND FRE	QUENCY	NOTATION			
		<u>TABLE 1.1</u>					
	OPE	RATIONAL MODES					
MODE	REACTIVITY CONDITION, K _{eff}	% RATED THERMAL POWER ⁽¹⁾		AGE COOLANT			
1. Power Operation	≥0.99	>5%		≥350°F			
2. Startup	≥0.99	≤5%		≥350°F			
3. Hot Standby	<0.99	0		≥350°F			
4. Hot Shutdown	<0.99	0		350°F >T _{avg}			
				>200°F			
5. Cold Shutdown	<0.99	0		≤200°F			
6. Refueling ⁽²⁾	≤0.95	0		≤140°F			

(1) (2)

Excluding decay heat. Reactor vessel head unbolted or removed and fuel in the vessel.

Title: ODCM: Controls for RET	S and REMP Programs ATTACHMENT A Page 2 of 2 DLS: OPERATIONAL MODES AND F	Unit: <u>1/2</u> Revision: 2	1/2-ODC-3.03 Level Of Use: General Skill Reference Page Number:
	ATTACHMENT A	Revision:	General Skill Reference Page Number:
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ODCM CONTRO	Page 2 of 2	2	0 0 0 0
· .		REQUENCY	<u> </u>
	TABLE 1.2		
	FREQUENCY NOTATION		
NOTATI	ON FREQUENCY		
S	At least once per 12 hours		
D	At least once per 24 hours		
W	At least once per 7 days		
Μ	At least once per 31 days		
Q	At least once per 92 days		
SA	At least once per 184 days		
R	At least once per 18 months		
S/U	Prior to each reactor startup		
Р	Completed prior to each releas	se	
N.A.	Not applicable		

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ODCM: Controls for RETS and REMP Programs

ATTACHMENT B Page 1 of 3 ODCM CONTROLS: DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these CONTROLS.

<u>ACTION</u> shall be those additional requirements specified as corollary statements to each principal CONTROL and shall be part of the CONTROLS.

<u>CHANNEL CALIBRATION</u> shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

<u>CHANNEL CHECK</u> shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

<u>CHANNEL FUNCTIONAL TEST</u> shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

<u>FREQUENCY NOTATION</u> specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

<u>GASEOUS RADWASTE TREATMENT SYSTEM</u> is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

<u>MEMBER(S) OF THE PUBLIC (10 CFR 20)</u> means any individual except when that individual is receiving an occupational dose. This definition is used to show compliance to an ODCM Appendix C CONTROL that is based on 10 CFR Part 20.

<u>MEMBER(S) OF THE PUBLIC (40 CFR 190)</u> means any individual that can receive a radiation dose in the general environment, whether he may or may not also be exposed to radiation in an occupation associated with a nuclear fuel cycle. However, an individual is not considered a MEMBER OF THE PUBLIC during any period in which he is engaged in carrying out any operation which is part of the nuclear fuel cycle. This definition is used to show compliance to an ODCM CONTROL 3.11.4.1 that is based on 40 CFR Part 190.

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ODCM: Controls for RETS and REMP Programs

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OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Technical Specification (TS) Section 6.8.6 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports that are also required by the Administrative Controls Section of the TS

<u>OPERABLE/OPERABILITY</u> A system, subsystem, train, component, or device shall be <u>OPERABLE</u> or have <u>OPERABILITY</u> when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electric power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related safety function(s).

<u>OPERATIONAL MODE</u> shall correspond to any one inclusive combination of core reactivity condition power level, and average reactor coolant temperature specified in ATTACHMENT A Table 1.1.

<u>PURGE</u> or <u>PURGING</u> is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration, or other operating conditions, in such a manner that replacement air or gas is required to purify the confinement.

<u>RATED THERMAL POWER</u> shall be a total reactor core heat transfer rate to the reactor coolant of 2689 MWt.

<u>REPORTABLE EVENT</u> shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

SHUTDOWN means reactor power change to 0% power.

<u>SITE BOUNDARY</u> shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee. The Figure for Liquid Effluent Site Boundary is contained in 1/2-ODC-2.01. The Figure for Gaseous Effluent Site Boundary is contained in 1/2-ODC-2.02.

STARTUP means reactor power change from 0% power.

<u>SOURCE CHECK shall</u> be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

<u>UNRESTRICTED AREA</u> means any area access to which is neither limited nor controlled by the licensee.

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<u>VENTILATION EXHAUST TREATMENT SYSTEM</u> is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal absorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

<u>VENTING</u> is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating conditions, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.

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	Page 1 of 2 ODCM CONTROLS: APPLICABILITY AND SURVEILLAN	ICE REQU	IREMENTS
	TROLS: APPLICABILITY		
3.0.1	Compliance with the ODCM CONTROLS in the succeeding Ol during the OPERATIONAL MODES or other conditions specif failure to meet the ODCM CONTROL, the associated ODCM A met.	ied therein	except that upon
3.0.2	Non-compliance with a ODCM CONTROL shall exist when the CONTROL and associated ODCM ACTION requirements are n intervals. If the ODCM CONTROL is restored prior to expiration completion of the ODCM ACTION requirements is not required	ot met with	hin the specified time
3.0.3	When a ODCM CONTROL is not met except as provided in the requirements, within one hour action shall be initiated to place to ODCM CONTROL does not apply by placing it, as applicable, it	he unit in a	ODCM ACTION MODE in which the
	 At least HOT STANDBY within the next 6 hours, At least HOT SHUTDOWN within the following 6 hour At least COLD SHUTDOWN within the subsequent 24 h 	s, and hours.	
	Where corrective measures are completed that permit operation requirements, the ODCM ACTION may be taken in accordance measured from the time of failure to meet the ODCM CONTRO requirements are stated in the individual ODCM CONTROLS.	with the sr	ecified time limits as
3.0.4	Entry into an OPERATIONAL MODE or other specified conditions for the ODCM CONTROL are not met and the association shutdown if they are not met within a specified time interval. En MODE or specified condition may be made in accordance with 0 when conformance to them permits continued operation of the fattime. This provision shall not prevent passage through or to OPI required to comply with ODCM ACTION requirements. Except stated in the individual ODCM CONTROLS.	ated ODC atry into an ODCM AC acility for a FRATION	M ACTION requires a OPERATIONAL TION requirements n unlimited period of AL MODES as

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	Beaver Valley Power Station	Procedure Num	1ber: /2-ODC-3.03
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	ODCM CONTROLS: APPLICABILITY AND SURVEILLAN	ICE REQU	IREMENTS
CONT	ROLS: SURVEILLANCE REQUIREMENTS		
4.0.1	Surveillance Requirements shall be met during the OPERATIO specified for individual ODCM CONTROLS unless otherwise Surveillance Requirement.	NAL MOD stated in an	ES or other conditions individual ODCM
4.0.2	Each ODCM Surveillance Requirement shall be performed with with a maximum allowable extension not to exceed 25% of the	hin the spec ODCM su	ified time interval rveillance interval.
4.0.3	Failure to perform a ODCM Surveillance Requirement within the interval (defined by ODCM CONTROL 4.0.2), shall constitute OPERABILITY requirements for a ODCM CONTROL. The the requirements are applicable at the time it is identified that an O has not been performed. The ODCM ACTION requirements means to permit the completion of the ODCM surveillance when the a ODCM ACTION requirements are less than 24 hours. ODCM have to be performed on inoperable equipment.	non-compl ime limits o DCM Survenay be delay allowable ou	iance with the of the ODCM ACTION eillance Requirement yed for up to 24 hours utage time limits of the
4.0.4	Entry into an OPERATIONAL MODE or other specified cond ODCM Surveillance Requirement(s) associated with the ODCI within the stated ODCM surveillance interval or as otherwise s prevent passage through or to OPERATIONAL MODES as rec ACTION requirements.	M CONTRO specified. T	OL has been performed This provision shall not

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	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.03
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	ODCM CONTROLS: RADIATION MONITORING	JINSTRUMEN	TATION
CONTROL	S: RADIATION MONITORING (HIGH RANGE IN	ISTRUMENTA	TION)
3.3.3.1	The radiation monitoring instrumentation channel	s shown in Tabl	a 3 3 6 shall be
	OPERABLE with their alarm/trip setpoints within	the specified lin	nits.
APPLICAB		•	
	<u></u>		
ACTION:			
a.	With a radiation monitoring channel alarm/trip set	point exceeding	the value shown in
	ODCM Control 3.3.3.1, Table 3.3-6, adjust the set or declare the channel inoperable.	point to within t	he limit within 4 hour
b.	-	•• •	
U.	With one or more radiation monitoring channels in ODCM Control 3.3.3.1, Table 3.3-6.	noperable, take t	he ACTION shown ir
		÷	
с.	The provisions of ODCM Control 3.0.3 are not ap	plicable.	
	The provisions of ODCM Control 3.0.3 are not ap ANCE REQUIREMENTS	plicable.	
	ANCE REQUIREMENTS		strated ODED A DI E 1
SURVEILL	ANCE REQUIREMENTS Each radiation monitoring instrumentation channe the performance of the CHANNEL CHECK, CHA CHANNEL FUNCTIONAL TEST operations duri	l shall be demon	ATION and
SURVEILL	ANCE REQUIREMENTS Each radiation monitoring instrumentation channe the performance of the CHANNEL CHECK, CHA	l shall be demon	ATION and
SURVEILL	ANCE REQUIREMENTS Each radiation monitoring instrumentation channe the performance of the CHANNEL CHECK, CHA CHANNEL FUNCTIONAL TEST operations duri	l shall be demon	ATION and

11.1 1.1 Here.

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<u>TABLE 3.3</u> IONITORINO	ORING INST <u>-6</u> <u>3 INSTRUM</u> planned Metho <u>SETPOINT</u>	ENTATION od of Moni P ME/	N	
TACHMEN Page 2 of 8 TON MONTI <u>TABLE 3.3</u> <u>IONITORINO</u> PMM = Prep APPLICABLE <u>MODES</u>	FORING INST <u>-6</u> <u>3 INSTRUMI</u> planned Metho <u>SETPOINT</u> se)	Revision: 2 TRUMENT ENTATION od of Moni ME/	Page Number: 15 of TATION NATION NOMINAL ASUREMENT	75
Page 2 of 8 TON MONTI <u>TABLE 3.3</u> IONITORING PMM = Prep APPLICABLE <u>MODES</u> Elevated Releas	FORING INST <u>-6</u> <u>3 INSTRUMI</u> planned Metho <u>SETPOINT</u> se)	ENTATION od of Moni P ME/	TATION <u>N</u> itoring ^(a) NOMINAL ASUREMENT	
TON MONT <u>TABLE 3.3</u> <u>IONITORINO</u> PMM = Prej APPLICABLE <u>MODES</u> Elevated Releas	<u>-6</u> <u>3 INSTRUMI</u> planned Metho <u>SETPOINT</u> se)	ENTATION od of Moni P ME/	<u>N</u> itoring ^(a) NOMINAL ASUREMENT	ACTION
TABLE 3.3 IONITORING PMM = Prep APPLICABLE <u>MODES</u> Elevated Releas	<u>-6</u> <u>3 INSTRUMI</u> planned Metho <u>SETPOINT</u> se)	ENTATION od of Moni P ME/	<u>N</u> itoring ^(a) NOMINAL ASUREMENT	ACTION
IONITORING PMM = Prey APPLICABLE <u>MODES</u> Elevated Releas	<u>G INSTRUM</u> planned Metho <u>SETPOINT</u> se)	od of Moni P MEA	itoring ^(a) NOMINAL ASUREMENT	ACTION
PMM = Prep APPLICABLE <u>MODES</u> Elevated Releas	planned Metho <u>SETPOINT</u> se)	od of Moni P MEA	itoring ^(a) NOMINAL ASUREMENT	ACTION
APPLICABLE <u>MODES</u> Elevated Releas	<u>SETPOINT</u> se)	r ME/	NOMINAL ASUREMENT	ACTION
MODES Elevated Releas	<u>SETPOINT</u> se)	ME	ASUREMENT	ACTION
1, 2, 3, & 4	≤/98 cpn	10-3	$-10^3 \mathrm{uCi/cc}^{(2)}$	35
				33
1, 2, 3, & 4	N/A	10 ⁻¹	-10 ⁵ uCi/cc ⁽²⁾	35
	· · ·		. · · · ·	
		10-3	³ 10 ³ uCi/cc ⁽²⁾	35
1, 2, 3, & 4	≤009 chin	10	-10 110000	55
1, 2, 3, & 4	N/A	10 ⁻¹	¹ -10 ⁵ uCi/cc ⁽²⁾	35
				07
1, 2, 3, & 4	N/A	10-	-10 ⁻ uCi/cc ^(*)	35
1, 2, 3, & 4	<u><</u> 1.83E⁵ cj	om 10 ⁻¹	¹ -10 ⁵ υCi/cc ⁽³⁾	35
	Also called Ve 1, 2, 3, & 4 1, 2, 3, & 4 replanned methon are not consid oply to the PMIN	Also called Ventilation Vent) 1, 2, 3, & 4 ≤ 669 cpm 1, 2, 3, & 4 $\leq 1.83E^5$ cp 1, 2, 3, & 4 N/A 1, 2, 3, & 4 N/A 1, 2, 3, & 4 $\leq 1.83E^5$ cp replanned methods to be used wh n are not considered comparable oply to the PMM. Therefore, the	Also called Ventilation Vent) 1, 2, 3, & 4 $\leq 669 \text{ cpm}$ 10 ⁻¹ 1, 2, 3, & 4 $\leq 1.23 \text{ cpm}$ 10 ⁻¹ 1, 2, 3, & 4 N/A 10 ⁻¹ 1, 2, 3, & 4 N/A 10 ⁻¹ 1, 2, 3, & 4 $\leq 1.83 \text{ E}^5 \text{ cpm}$ 10 ⁻¹ replanned methods to be used when the primation of the primation of the second seco	Also called Ventilation Vent) 1, 2, 3, & 4 $\leq 669 \text{ cpm}$ $10^{-3} - 10^{3} \text{ uCi/cc}^{(2)}$ 1, 2, 3, & 4 N/A $10^{-1} - 10^{5} \text{ uCi/cc}^{(2)}$ 1, 2, 3, & 4 N/A $10^{-3} - 10^{3} \text{ uCi/cc}^{(3)}$ 1, 2, 3, & 4 N/A $10^{-3} - 10^{3} \text{ uCi/cc}^{(3)}$ 1, 2, 3, & 4 $\leq 1.83E^{5} \text{ cpm}$ $10^{-1} - 10^{5} \text{ uCi/cc}^{(3)}$ replanned methods to be used when the primary instrument is n are not considered comparable alternate monitoring channel uply to the PMM. Therefore, the reporting requirement of Action

Beaver Valley OCM: Controls for RETS and RE ODCM CONTROLS:	MP Pro			Unit: 1/2	2-ODC-3.03 Level Of Use: General Skill Page Number:	
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ODCM CONTROLS:		Page 3 of 8				
	VUDIU	TION MONIT	ORING INST	RUMENT	ATION	
	TA	BLE 3.3-6 (Con	tinued)			
BV-1 KADIA	TION I	<u>MONITORING</u>	INSTRUME	NTATION		
Pri = Primary Instru	nents.	PMM = Pren	Janned Metho	d of Monite	····· ~(2)	
				I OI MONIN	Jung	
		MODES	SETPOINT"	. <u>P</u>	ANGE	ACTION
a. Atmospheric Steam Dump Valve and	nd Code	Safety Relief Val	ve Discharge			
Pri: (RM-IMS-100A)	(1)	1, 2, 3, & 4		10 ⁻¹ -	10 ³ nCi/cc	35
			<u> </u>	10		55
	(1)	1, 2, 3, & 4	< 50 cpm	10 ⁻¹ -	10 ³ "Ci/co	35
PMM: (Form 1/2-HPP-4.02.009.F01)			<u></u>	10 -	IV UCDCC	33
Pri: (RM-1MS-100C)	(1)	1, 2, 3, & 4	< 50 cpm	10 ⁻¹ -		35
PMM: (Form 1/2-HPP-4.02.009.F01)		, _, _, _, _, _,	Zoo chu	10 -		33
Auxiliary Feedwater Pump Turbine	Exhaust					
Pri: (RM-1MS-101)			< 650 cmm	10-1	103.00	25
PMM: (Form 1/2-HPP-4.02.009.F01)	~~/	-, -, 0, 0, 7		10 -	IU UCVCC	35
	Pri = Primary Instrum MII CHA <u>INSTRUMENT</u> OPE Noble Gas Effluent Steam Monitors Atmospheric Steam Dump Valve an Pri: (RM-1MS-100A) PMM: (Form 1/2-HPP-4.02.009.F01) Pri: (RM-1MS-100B) PMM: (Form 1/2-HPP-4.02.009.F01) Pri: (RM-1MS-100C) PMM: (Form 1/2-HPP-4.02.009.F01) Auxiliary Feedwater Pump Turbine	Pri = Primary Instruments,MINIMUM CHANNELS INSTRUMENTOPERABLENoble Gas Effluent Steam MonitorsAtmospheric Steam Dump Valve and Code (Code	Pri = Primary Instruments,PMM = PrepMINIMUM CHANNELSAPPLICABLE MODESINSTRUMENTOPERABLE OPERABLEMODESNoble Gas Effluent Steam Monitors. Atmospheric Steam Dump Valve and Code Safety Relief ValPri: (RM-1MS-100A)(1)1, 2, 3, & 4PMM: (Form 1/2-HPP-4.02.009.F01)Pri: (RM-1MS-100B)(1)1, 2, 3, & 4PMM: (Form 1/2-HPP-4.02.009.F01)Pri: (RM-1MS-100C)(1)1, 2, 3, & 4PMM: (Form 1/2-HPP-4.02.009.F01)Auxiliary Feedwater Pump Turbine ExhaustPri: (RM-1MS-101)(1)1, 2, 3, & 4	Pri = Primary Instruments,PMM = Preplanned MethodMINIMUM CHANNELSAPPLICABLEINSTRUMENTOPERABLEMODESSETPOINT(1)Noble Gas Effluent Steam MonitorsAtmospheric Steam Dump Valve and Code Safety Relief Valve DischargePri: (RM-1MS-100A)(1)1, 2, 3, & 4 \leq 50 cpmPMM: (Form 1/2-HPP-4.02.009.F01)Pri: (RM-1MS-100B)(1)1, 2, 3, & 4 \leq 50 cpmPMM: (Form 1/2-HPP-4.02.009.F01)Pri: (RM-1MS-100C)(1)1, 2, 3, & 4 \leq 50 cpmPMM: (Form 1/2-HPP-4.02.009.F01)Auxiliary Feedwater Pump Turbine ExhaustPri: (RM-1MS-101)(1)1, 2, 3, & 4 \leq 650 cpm	Pri = Primary Instruments,PMM = Preplanned Method of MonitorMINIMUM CHANNELSAPPLICABLEMCASINSTRUMENTOPERABLEMODESSETPOINT(1)Oble Gas Effluent Steam MonitorsMode Safety Relief Valve DischargePri: (RM-1MS-100A)(1)1, 2, 3, & 4 ≤ 50 cpmPMM: (Form 1/2-HPP-4.02.009.F01)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-100B)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-100B)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-100C)(1)1, 2, 3, & 4 ≤ 50 cpmPMM: (Form 1/2-HPP-4.02.009.F01)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-100C)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-100C)(1)1, 2, 3, & 4 ≤ 50 cpmPri: (RM-1MS-101)(1)1, 2, 3, & 4 ≤ 650 cpm	MINIMUM CHANNELS INSTRUMENTMINIMUM OPERABLENOMINAL MEASUREMENT MODESNOMINAL MEASUREMENT RANGENoble Gas Effluent Steam MonitorsAtmospheric Steam Dump Valve and Code Safety Relief Valve Discharge Pri: (RM-1MS-100A) Pri: (RM-1MS-100B) Pri: (RM-1MS-100B) Pri: (RM-1MS-100B) Pri: (RM-1MS-100B) Pri: (RM-1MS-100B) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100C) Pri: (RM-1MS-100D)(1)1, 2, 3, & 4 ≤ 50 cpm 10^{-1} - 10^{3} uCi/ccPri: (RM-1MS-100C) PMM: (Form 1/2-HPP-4.02.009.F01)(1)1, 2, 3, & 4 ≤ 50 cpm 10^{-1} - 10^{3} uCi/ccPri: (RM-1MS-100C) PMM: (Form 1/2-HPP-4.02.009.F01)(1)1, 2, 3, & 4 ≤ 50 cpm 10^{-1} - 10^{3} uCi/ccPri: (RM-1MS-100D) Pri: (RM-1MS-101)(1)1, 2, 3, & 4 ≤ 50 cpm 10^{-1} - 10^{3} uCi/cc

SINCE the PMM instruments shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, <u>THEN</u> the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

1. Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) <u>Midrange Noble Gas (Xe-133)</u> Pri: (2HVS-RQ109C) (1) 1, 2, 3, & 4 N.A. 10 ⁻⁴ -10 ² µCi/cc 35 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ µCi/cc 35	Beaver Valley Po	wer Station			1/2-ODC-3.03	
DDCM: Controls for RETS and REMP Programs Revision: 2 Page Number: 2 17 of 75 ATTACHMENT D Page 4 of 8 ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION TABLE 3.3-6 (Continued) BV-2 RADIATION MONITORING INSTRUMENTATION Pri = Primary Instruments, PMIM = Preplanned Method of Monitoring ^(a) MINIMUM CHANNELS APPLICABLE NOMINAL CHANNELS APPLICABLE NOMINAL CHANNELS APPLICABLE NOMINAL CHANNELS APPLICABLE MIDAGE ACTIO 1.Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) <u>Midrange Noble Gas (Xe-133)</u> Pri: (2HVS-RQ109C) 2nd PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-	itle:					Reference
ATTACHMENT D Page 4 of 8 ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION TABLE 3.3-6 (Continued) BV-2 RADIATION MONITORING INSTRUMENTATION MINE 3.3-6 (Continued) DEV-2 RADIATION MONITORING INSTRUMENTATION Pri = Primary Instruments, PMM = Preplanned Method of Monitoring ^(a) MINIMUM NOMINAL CHANNELS APPLICABLE MINIMUM CHANNEL SAPPLICABLE MODES SETPOINT ⁽¹⁾ RANGE ACTIO 1.Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) PMM = Preplanned Method of Monitoring ^(a) MINE MODES SETPOINT ⁽¹⁾ RANGE Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) PMM = Preplanned Method of Monitoring ^(a) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109D) Primary Instruments, PICHONE	DDCM: Controls for RETS and REMP	' Programs				75
Page 4 of 8 ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION TABLE 3.3-6 (Continued) BV-2 RADIATION MONITORING INSTRUMENTATION BV-2 RADIATION MONITORING INSTRUMENTATION Pri = Primary Instruments, PMM = Preplanned Method of Monitoring ^(a) MINIMUM CHANNELS APPLICABLE NOMINAL MEASUREMENT CHANNELS APPLICABLE MODES SETPOINT ⁽¹⁾ RANGE INSTRUMENT OPERABLE MODES SETPOINT ⁽¹⁾ NANGE ACTIO 1. Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) (1) 1,2,3, & 4 N.A. 10 ⁴ -10 ² µCi/cc 35 AIGPMM: (2HVS-RQ109D) 2.36 PMM: (2HVS-RQ109D) 2.36 PMM: (2HVS-RQ109D) 2.37 Pri: (2HVS-RQ109D) 2.36 X(2-133) Pri: (2HVS-RQ109D) (1) 1,2,3, & 4 N.A. 10 ⁻¹ -10 ⁵ µCi/cc 35		ATTACHMENT	 D	L	<u>1</u>	
TABLE 3.3-6 (Continued) BV-2 RADIATION MONITORING INSTRUMENTATION Pri = Primary Instruments, PMM = Preplanned Method of Monitoring ^(a) MINIMUM NOMINAL CHANNELS APPLICABLE MINIMUM NOMINAL CHANNELS APPLICABLE MODES SETPOINT ⁽¹⁾ RANGE ACTIO 1.Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) (1) 1, 2, 3, & 4 N.A. 10 ⁴ -10 ² µCi/cc 35 Migh Range Noble Gas (Xe-133) This PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ µCi/cc 35						
BV-2 RADIATION MONITORING INSTRUMENTATION Pri = Primary Instruments, PMM = Preplanned Method of Monitoring ^(a) MINIMUM NOMINAL CHANNELS APPLICABLE MEASUREMENT INSTRUMENT OPERABLE MODES SETPOINT ⁽¹⁾ RANGE ACTIO 1. Noble Gas Effluent Monitors a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) (1) 1, 2, 3, & 4 N.A. 10 ⁴ -10 ² µCi/cc 35 1st PMM: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁴ -10 ⁵ µCi/cc 35 3rd PMM: Grab Sampling every 12 hours High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ µCi/cc 35	ODCM CONTROLS: RA	DIATION MONITO	DRING INST	RUMEN	FATION	
Pri = Primary Instruments,PMM = Preplanned Method of Monitoring(a)MINIMUM CHANNELSNOMINAL MEASUREMENT MODESNOMINAL MEASUREMENT RANGEINSTRUMENTOPERABLEMODESSETPOINT(1)RANGEACTIO1. Noble Gas Effluent Monitorsa. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C)(1)1, 2, 3, & 4N.A. $10^{-4} - 10^2 \mu$ Ci/cc35Ist PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D)(1)1, 2, 3, & 4N.A. $10^{-1} - 10^5 \mu$ Ci/cc35		TABLE 3.3-6 (Con	tinued)		•	·
MINIMUM CHANNELS APPLICABLENOMINAL MEASUREMENT MODESNOMINAL MEASUREMENT RANGE1. Noble Gas Effluent Monitorsa. SLCRS Filtered Pathway (CV-2; Also called Elevated Release)Midrange Noble Gas (Xe-133)Pri: (2HVS-RQ109C)(1)1, 2, 3, & 4N.A.10 rd -10 ² µCi/cc351st PMM: (2HVS-RQ109B)3rd PMM: Grab Sampling every 12 hoursHigh Range Noble Gas (Xe-133)Pri: (2HVS-RQ109D)(1)1, 2, 3, & 4N.A.10 ^{r1} -10 ⁵ µCi/cc35	BV-2 RADIATI	ON MONITORING	INSTRUME	NTATIO	N	
CHANNELS INSTRUMENTAPPLICABLE OPERABLEMEASUREMENT RANGEACTIO1. Noble Gas Effluent Monitorsa. SLCRS Filtered Pathway (CV-2; Also called Elevated Release)ACTIOMidrange Noble Gas (Xe-133)Pri: (2HVS-RQ109C)(1)1, 2, 3, & 4N.A. $10^{-4} - 10^2 \mu \text{Ci/cc}$ 35Pri: (2HVS-RQ109C)(1)1, 2, 3, & 4N.A. $10^{-4} - 10^2 \mu \text{Ci/cc}$ 35Jard PMM: (2HVS-RQ109D)3rd PMM: Grab Sampling every 12 hoursHigh Range Noble Gas (Xe-133)71Pri: (2HVS-RQ109D)(1)1, 2, 3, & 4N.A. $10^{-1} - 10^5 \mu \text{Ci/cc}$ 35	Pri = Primary Instrume	nts, PMM = Prepl	anned Metho	od of Mon	itoring ^(a)	
a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release) <u>Midrange Noble Gas (Xe-133)</u> Pri: (2HVS-RQ109C) (1) 1, 2, 3, & 4 N.A. 10 ⁴ -10 ² μCi/cc 35 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ μCi/cc 35	CHANN	ELS APPLICABLE	SETPOINT	ME	ASUREMENT	ACTION
Midrange Noble Gas (Xe-133) Pri: (2HVS-RQ109C) (1) 1, 2, 3, & 4 N.A. 10 ⁻⁴ -10 ² μCi/cc 35 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours 5 High Range Noble Gas (Xe-133) Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ μCi/cc 35	1. Noble Gas Effluent Monitors					
Pri: (2HVS-RQ109C)(1)1, 2, 3, & 4N.A. $10^{-4}-10^2 \mu\text{Ci/cc}$ 351st PMM: (2HVS-RQ109D)2nd PMM: (2HVS-RQ109B)3rd PMM: Grab Sampling every 12 hours37High Range Noble Gas (Xe-133)Pri: (2HVS-RQ109D)(1)1, 2, 3, & 4N.A. $10^{-1}-10^5 \mu\text{Ci/cc}$ 35	a. SLCRS Filtered Pathway (CV-2; Also o	called Elevated Release)			
1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours <u>High Range Noble Gas (Xe-133)</u> Pri: (2HVS-RQ109D) (1) 1, 2, 3, & 4 N.A. 10 ⁻¹ -10 ⁵ µCi/cc 35						
Pri: (2HVS-RQ109D)(1)1, 2, 3, & 4N.A. 10^{-1} - $10^{5} \mu$ Ci/cc35	1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B)		N.A.	10) ⁻⁴ -10 ² μCi/cc	35
2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every 12 hours	Pri: (2HVS-RQ109D) (1) 1st PMM: (2HVS-RQ109C) 2nd PMM: (2HVS-RQ109B)		N.A.	10) ⁻¹ -10 ⁵ μCi/cc	35

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	•	Beav	ver Valley Power Station	Procedure N		
Title:					1/2-ODC-3.03	
				Unit:	Level Of Use:	
ODCN	M. Con	trale fo	r RETS and REMP Programs	1/2	General Skill Referenc	
		1015 10	I KEIS and REMP Programs	Revision:	Page Number:	
)				2	<u>18 of 75</u>	
			ATTACHMENT D			
		_	Page 5 of 8			
{	(ODCM	CONTROLS: RADIATION MONITORING I	NSTRIMEN	TATION	
/					INION	
			TABLE 3.3-6 (Continued)			
			TABLE NOTATIONS			
(1)	Abov	e backg	ground			
(2)	Nomi					
	nom	nai ran	ge for Ch 7 and Ch 9. The Alarm in set on Ch 7	7.		
(3)	Nomi	Nominal range for Ch 7 and Ch 9. The Alarm in set on Ch 9.				
⁽⁴⁾ Other SPING-4 channels are not applicable to this ODCM Control.						
				.011101.		
			ACTION STATEMENTS			
	ON 35	TT <i>T</i> :41-				
	014 22	WIN	the number of OPERABLE channels less than 1	required by the	e Minimum Channels	
		OFER	ADLE requirement, either restore the inoperation	le Channel(s)	to OPERABLE status	
		withir	n 72 hours, or:		to of ERADLE status	
1 · · · ·				•		
		a)	Initiate the preplanned alternate method of me		• •	
ł		•	parameter(s), and	muoning the a	ppropriate	
			Parameter(3), and			
1		ь)	Datum the alternative opposite			
]		b)	Return the channel to OPERABLE status with	uin 30 days, or	r, explain in the next	
1			Annual Radioactive Effluent Release Report y	why the inope	rability was not	
			corrected in a timely manner.	2		
1			· ······			
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Beaver Valley I	Power Sta	tion	Procedure Numb	er: 2-ODC-3.03
Title:			Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Controls for RETS and REI	MP Programs		Revision: 2	Page Number: 19 of 75
ODCM CONTROLS: 1	Page	HMENT D : 6 of 8 MONITORING IN	STRUMENT	
		3-3 (Continued)		
BV-1 RADIATION MONITOR				
Pri = Primary Instru	nents, PM	M = Preplanned Me		
INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAI <u>TEST</u>	MODES IN WHICH SURVEILLANCE <u>REOUIRED</u>
1. Noble Gas Effluent Monitors - SPIN		<u>Ormanora anticar</u>	<u></u>	<u></u>
a. Reactor Building/SLCRS (CV-1;		ated Release)		
Mid Range Noble Gas Pri: (RM-1VS-110 Ch 7) 1st PMM: (RM-1VS-112 SA-10) 2nd PMM: (RM-1VS-107B) 3rd PMM: Grab Sampling every 12	S	R	М	1, 2, 3, & 4
High Range Noble Gas Pri: (RM-1VS-110 Ch 9) 1st PMM: (RM-1VS-112 SA-9) 2nd PMM: (RM-1VS-107B) 3rd PMM: Grab Sampling every 12	S	R	М	1, 2, 3, & 4
b. Auxiliary Building Ventilation Sy	stem (VV-1; Als			
<u>Mid Range Noble Gas</u> Pri: (RM-1VS-109 Ch 7) 1st PMM: (RM-1VS-111 SA-10) 2nd PMM: (RM-1VS-101B)	S	R	М	1, 2, 3, & 4
3rd PMM: Grab Sampling every 12				
<u>High Range Noble Gas</u> Pri: (RM-1VS-109 Ch 9) 1st PMM: (RM-1VS-111 SA-9) 2nd PMM: (RM-1VS-101B) 3rd PMM: Grab Sampling every 12	S 2 hours	R	М	1, 2, 3, & 4
c. Gaseous Waste Process Vent Syst		_		10064
Mid Range Noble Gas Pri: (RM-1GW-109 Ch 7) 1st PMM: (RM-1GW-110 SA-10) 2nd PMM: (RM-1GW-108B) 3rd PMM: Grab Sampling every 12	S	R	М	1, 2, 3, & 4
Bird PMM: Grab Sampling every 12High Range Noble GasPri: RM-1GW-109 Ch 9)1st PMM: (RM-1GW-110 SA-9)2nd PMM: (RM-1GW-108B)3rd PMM: Grab Sampling every 12	S	R	М	1, 2, 3, & 4

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(a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. <u>SINCE</u> the PMM instruments shown are not considered comparable alternate monitoring channels, <u>THEN</u> the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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	Page	7 of 8		
ODCM CONTROLS: RA				
		TOM TOKING I	NSTRUMENT?	ATION
	TABLE 4.3	-3 (Continued)		· ·
BV-1 PADIATION MONTROPPA		<u>e (continued)</u>		
BV-1 RADIATION MONITORING	<u> INSTRUM</u>	ENTATION SUR	VEILLANCE	REOUIREMENTS
Pri = Primary Instrume	nte DMA			()
Pri = Primary Instrume		= Preplanned Me	thod of Monito	oring ^(a)
			CHANNEL	MODES IN WHICH
INIGTED IN (TANT	CHANNEL	CHANNEL	FUNCTIONAL	SURVEILLANCE
INSTRUMENT	<u>CHECK</u>	CALIBRATION	TEST	REOUIRED
2. Noble Gas Effluent Steam Monitors				
a. Atmospheric Steam Dump Valve and	Code Safety P	allof Value Diash		
Pri: (RM-1MS-100A)				
PMM: (Form 1/2-HPP-4.02.009.F01)	S	R	Μ	1, 2, 3, & 4
Pri: (RM-1MS-100B)				
PMM: (Form 1/2-HPP-4.02.009.F01)	S	R	М	1, 2, 3, & 4
Pri: (RM-1MS-100C)	-			
PMM: (Form 1/2-HPP-4.02.009.F01)	S	R	М	1, 2, 3, & 4
		·		
b. Auxiliary Feedwater Pump Turbine I	Exhaust			
Pri: (RM-1MS-101)	S	R	М	1, 2, 3, & 4
PMM: (Form 1/2-HPP-4.02.009.F01)			=7 =	1, 4, 3, 06 4
(3) 1				

Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. <u>SINCE</u> the PMM instruments shown are not considered comparable alternate monitoring channels, <u>THEN</u> the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

—	D X7 11		•	Procedure Num	hen
	Beaver Valle	y Power Sta	tion		2-ODC-3.03
Title:				Unit: 1/2	Level Of Use: General Skill Reference
OD	CM: Controls for RETS and	REMP Programs		Revision: 2	Page Number: 21 of 75
			HMENT D		
	ODCM CONTROL		8 of 8	ICTUINENT	
		TABLE	E 4.3-3 (Continued	<u>1)</u>	
	BV-2 RADIATION MONITC	RING INSTRUM	ENTATION SUR	VEILLANCE	REQUIREMENTS
	Pri = Primary Ins	truments, PMM	I = Preplanned Me	thod of Monit	oring ^(a)
	INSTRUMENT	CHANNEL <u>CHECK</u>	CHANNEL CALIBRATION	CHANNEL FUNCTIONAI <u>TEST</u>	MODES IN WHICH SURVEILLANCE <u>REOUIRED</u>
1.1	Noble Gas Effluent Monitors	<u>~~~~~</u>	<u>Mandina 11/11</u>	101	MEQUINED
ł	. SLCRS Unfiltered Pathway (C	V-2; Also called Ele	vated Release)		
	Mid Range Noble Gas Pri: (2HVS-RQ109C) 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every	S	R	М	1, 2, 3, & 4
	High Range Noble Gas Pri: (2HVS-RQ109D) 1st PMM: (2HVS-RQ109C) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling every	S v 12 hours	R	Μ	1, 2, 3, & 4
(8)	Instruments or actions shown as inoperable. <u>SINCE</u> the PMM in the ODCM Surveillance Require would still apply when inoperabi	struments shown are r ments do not apply to	ot considered compare the PMM. Therefore	rable alternate mo	nitoring channels, THEN
		· ·			÷
		• •			
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1					

	Beaver Valley Power Station	Procedure Nu				
Title:			1/2-ODC-3.03			
		Unit: 1/2	Level Of Use: General Skill Reference			
ODCM	1: Controls for RETS and REMP Programs	Revision:	Page Number:			
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	ATTACHMENT E					
	Page 1 of 10					
	ODCM CONTROLS: RETS INSTRUMENTATION FOR I	IQUID EF	FLUENTS			
	·					
CONT	TROLS: RADIOACTIVE LIQUID EFFLUENT MONITORING	INSTRUM	IENTATION			
3.3.3.	9 In accordance with BV-1 and BV-2 Technical Specifica radioactive liquid effluent monitoring instrumentation c 3.3.3.9, Table 3.3-12 shall be OPERABLE with their ala that the limits of ODCM CONTROL 3.11.1.1 are not ex of the radiation monitoring channels shall be determined 2.01.	hannels sh arm/trip se ceeded. T	own in ODCM Control tpoints set to ensure he alarm/trin setpoints			
<u>Applic</u>	cability: During releases through the flow path.					
<u>Action</u>	<u>n:</u>					
a.	With a radioactive liquid effluent monitoring instrumentation cl conservative than required by the above specification, immediat radioactive liquid effluents monitored by the affected channel of	elv suspen	d the release of			
b.						
c.	The provisions of ODCM CONTROL 3.0.3 are not applicable.					
SURV	EILLANCE REQUIREMENTS					
4.3.3.9	Each radioactive liquid effluent monitoring instrumentat demonstrated operable by performance of the CHANNE	ion channe L CHECK	el shall be , SOURCE CHECK,			

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and the horses

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demonstrated operable by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in ODCM Control 3.3.3.9, Table 4.3-12.

Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.03
Title:	Unit: 1/2	Level Of Use: General Skill Reference
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ATTACHMENT I Page 2 of 10 ODCM CONTROLS: RETS INSTRUMENTATI	E	
TABLE 3.3-12		
BV-1 RADIOACTIVE LIQUID EFFLUENT MOI	NITORING INSTRU	MENTATION
Pri = Primary Instruments, Alt = 1	Alternate Instruments	3
INSTRUMENT	MINIMUM CHANNELS <u>OPERABLE</u>	<u>ACTION</u>
1. Gross Activity Monitors Providing Automatic Termi	ination Of Release	
a. Liquid Waste Effluents Monitor Pri: (RM-1LW-104)	(1)	23
 b. Liquid Waste Contaminated Drain Monitor Pri: (RM-1LW-116) 	(1)	23
c. Auxiliary Feed Pump Bay Drain Monitor Pri: (RM-1DA-100)	(1)	24
2. Gross Activity Monitors Not Providing Termination	Of Release	
 a. Component Cooling-Recirculation Spray Heat Exchangers River Water Monitor Pri: (RM-1RW-100) 	(1)	24
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Line Pri: (FR-1LW-104) for (RM-1LW-104)	(1)	25
b. Liquid Waste Contaminated Drain Line Pri: (FR-1LW-103) for (RM-1LW-116)	(1)	25
 c. Cooling Tower Blowdown Line Pri: (FT-1CW-101-1) or Alt: (FT-1CW-101) and (2CWS-FT-101) 	(1)	25
4. Tank Level Indicating Devices (for tanks outside pla	ant building)	
a. Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A)	(1)	26
 b. Primary Water Storage Tank Pri: (LI-1PG-115B) for (1BR-TK-6B) 	(1)	26
 c. Steam Generator Drain Tank Pri: (LI-1LW-110) for (1LW-TK-7A) 	(1)	26
 d. Steam Generator Drain Tank Pri: (LI-1LW-111) for (1LW-TK-7B) 	(1)	26

Beaver Valley Power Static	n	Procedure N	
Title:			1/2-ODC-3.03
		Unit	Level Of Use:
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ODCM CONTROLS: RETS INSTRUMEN		(01 m	
	TATION FOR L	IQUID EF	FLUENTS
TABLE 3.3-12	(continued)		
BV-2 RADIOACTIVE LIQUID EFFLUENT	MONITORING I	NSTRUM	FNTATION
			LINIATION
Pri = Primary Instruments, Al	t = Alternate Instr	uments	
- ,			
	MTN	IMUM	
		NNELS	
INSTRUMENT		RABLE	
			<u>ACTION</u>
1. Gross Radioactivity Monitor Providing Alarm A	And Automatic T	erminati	on Of Polossa
		vi minati	on or melease
a. Liquid Waste Process Effluent Monitor		(1)	23
Pri: (2SGC-RQ100)		(*)	23
2. Gross Radioactivity Monitors Providing Alarm	But Not Providir	a Termi	notion Of Poloses
		ig i ernin	nation Of Release
a. None Required			
A 779			
3. Flow Rate Measurement Devices			
a. Liquid Radwaste Effluent		(1)	25
Pri: (2SGC-FS100)		(-)	<i>L</i> J
b. Cooling Tower Blowdown Line		(1)	25
Pri: (FT-1CW-101-1) or		(4)	25
Alt: (FT-1CW-101) and (2CWS-FT101)			
4. Tank Level Indicating Devices (for tanks outside	nlant hall the s		
g = orress (for tanks outside	piant buildings)		
a. None Required			
•			
			1

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ODCM: Controls for RETS and REMP Programs

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 3.3-12 (continued)

ACTION STATEMENTS

- Action 23 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may be initiated or resumed provided that prior to release:
 - 1. At least two independent samples are analyzed in accordance with ODCM SURVEILLANCE REQUIREMENT 4.11.1.1.1, and at least two technically qualified members of the Facility Staff independently verify the release rate calculations⁽¹⁾ and discharge valving, or
 - 2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

Otherwise, suspend release of radioactive effluents via this pathway.

- Action 24 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:
 - 1. That at least once per 12 hours grab samples are analyzed for gross radioactivity (beta or gamma) at a Lower Limit of Detection (LLD) of at least 1E-7 uCi/ml, or
 - 2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

(1) Since the computer software used for discharge permit generation automatically performs the release rate calculations, then the independent signatures on the discharge permit for "preparer" and "reviewer" satisfy the requirement for "...two technically qualified members of the Facility Staff independently verify the release rate calculations..."

	Beav	ver Valley Power Station	Procedure No	
Title:			Unit:	1/2-ODC-3.03 Level Of Use:
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O	DCM C	ATTACHMENT E Page 5 of 10 ONTROLS: RETS INSTRUMENTATION FOR <u>Table 3.3-12 (continued)</u>	LIQUID EF	
		ACTION STATEMENTS		
Action 25	With OPE	the number of channels OPERABLE less than rec RABLE requirement, effluent releases via this path	uired by th hway may c	e Minimum Channels ontinue provided:
	1.	The flow rate is estimated at least once per 4 ho curves may be used to estimate flow), or		
	2.	Initiate monitoring with the comparable alternat Surveillance requirements applicable to the inop comparable alternate monitoring channel when CONTROL requirement.	erable char	nel shall apply to the
Action 26	With OPEF	the number of channels OPERABLE less than req ABLE requirement, liquid additions to this tank r	uired by the nay continu	e Minimum Channels e provided:
	1.	The tank liquid level is estimated during all liqu		
	2.	Initiate monitoring with the comparable alternate Surveillance requirements applicable to the inop comparable alternate monitoring channel when a CONTROL requirement.	erable chan	nel shall apply to the

	Beaver Valley Pow	er Station		Procedure Nu	mber: [/2-ODC-3.03	
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	ODCM CONTROLS: RETS I	Page 6 of 10		IOUID FF	FLUENTS	
		TABLE 4.3-				
					~	
	<u>BV-1 RADIOACTIV</u> INSTRUMENTATIC				-	
	Pri = Primary Inst	ruments, Alt	= Alternate Ir	struments		
					CHANNE	
	INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHAN CALIBR/		IAL
1.Gr	oss Beta or Gamma Radioactivity Monito	rs Providing Aları	n And Automat	ic Terminat	ion Of Release	
a.	Liquid Radwaste Effluent Line Pri: (RM-1LW-104)	D	P ⁽⁵⁾	R ⁽³	» Q ⁽¹⁾	
Ъ.	Liquid Waste Contaminated Drain Line Pri: (RM-1LW-116)	D	P ⁽⁵⁾	R ⁽³) Q ⁽¹⁾	
c.	Auxiliary Feed Pump Bay Drain Monitor Pri: (RM-1DA-100)	D	D	R ⁽³)) Q ⁽¹⁾	
	ross Beta Or Gamma Radioactivity Monito lease	ors Providing Alar	m But Not Prov	viding Autor	matic Termination O)f
а.	Component Cooling - Recirculation Spray Heat Exchangers River Water Monitor Pri: (RM-1RW-100)	D	M ⁽⁵⁾	R ³	³⁾ Q ⁽²⁾	
3.Flo	ow Rate Monitors					
а.	Liquid Radwaste Effluent Lines Pri: (FR-1LW-104) for (RM-1LW-104)	D ⁽⁴⁾	NA	R	Q	
b.	Liquid Waste Contaminated Drain Line Pri: (FR-1LW-103) for (RM-1LW-116)	D ⁽⁴⁾	NA	R	Q	
c.	Cooling Tower Blowdown Line Pri: (FT-1CW-101-1) or Alt: (FT-1CW-101) and (2CWS-FT-101)	D ⁽⁴⁾	NA	R	Q	۰.

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Title:	Beaver Valley Pov	ver Station		Procedure Nu	mber: 1/2-ODC-3.03
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	ODCM CONTROLS: RETS	INSTRUMENT			
			STION FOR L	AQUID EF	FLUENIS
	Т	ABLE 4.3-12 (co	ntinued)		
	<u></u>	10100 1.0-12 (00	nanucaj		
	BV-1 RADIOACT				-
	BV-1 RADIOACT	VE LIQUID EFI	FLUENT MO	NITORINC	<u>}</u>
	<b>INSTRUMENTATI</b>	ON SURVEILL	ANCE REQU	<b>IREMENT</b>	<u>S</u>
		•			
	Pri = Primary Inst	truments. Alt :	= Alternate Ins	trumonto	
		,	- moman m	รแทนแร	
		,		suuments	
					CHANNEL
	INSTRUMENT	CHANNEL	SOURCE	CHAN	NEL FUNCTIONAL
<b>A T</b>	INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>		VEL FUNCTIONAL
4. Ta	ank Level Indicating Devices (for tanks	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHAN	NEL FUNCTIONAL
а.	ank Level Indicating Devices (for tanks Primary Water Storage Tank	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u> ings)	CHANI <u>CALIBRA</u>	VEL FUNCTIONAL TION <u>TEST</u>
a.	ank Level Indicating Devices (for tanks	CHANNEL <u>CHECK</u> outside plant buildi	SOURCE <u>CHECK</u>	CHAN	NEL FUNCTIONAL
<b>a.</b>	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A)	CHANNEL <u>CHECK</u> outside plant buildi D*	SOURCE <u>CHECK</u> ings) NA	CHANN <u>CALIBRA</u> R	VEL FUNCTIONAL TION <u>TEST</u>
a. b.	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A) Primary Water Storage Tank	CHANNEL <u>CHECK</u> outside plant buildi	SOURCE <u>CHECK</u> ings)	CHANI <u>CALIBRA</u>	VEL FUNCTIONAL TION <u>TEST</u>
a. b.	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A) Primary Water Storage Tank Pri: (LI -1PG-115B) for (1BR-TK-6B)	CHANNEL <u>CHECK</u> outside plant buildi D*	SOURCE <u>CHECK</u> ings) NA	CHANN <u>CALIBRA</u> R	VEL FUNCTIONAL TION TEST Q
a. b. : c. :	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A) Primary Water Storage Tank Pri: (LI -1PG-115B) for (1BR-TK-6B) Steam Generator Drain Tank	CHANNEL <u>CHECK</u> outside plant buildi D*	SOURCE <u>CHECK</u> ings) NA	CHANN <u>CALIBRA</u> R	VEL FUNCTIONAL TION TEST Q Q
a. b. : c. :	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A) Primary Water Storage Tank Pri: (LI -1PG-115B) for (1BR-TK-6B)	CHANNEL <u>CHECK</u> outside plant buildi D* D*	SOURCE <u>CHECK</u> ings) NA NA	CHANI <u>CALIBRA</u> R R	VEL FUNCTIONAL TION TEST Q
a. b. c.	ank Level Indicating Devices (for tanks of Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A) Primary Water Storage Tank Pri: (LI -1PG-115B) for (1BR-TK-6B) Steam Generator Drain Tank	CHANNEL <u>CHECK</u> outside plant buildi D* D*	SOURCE <u>CHECK</u> ings) NA NA	CHANI <u>CALIBRA</u> R R	VEL FUNCTIONAL TION TEST Q Q

*During liquid additions to the tank.

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	ATTACHMENT	E		
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ODCM CONTROLS:	RETS INSTRUMENTAT	TION FOR L	IQUID EFFI	LUENIS
	TABLE 4.3-12 (con	tinued)		
BV-2 RAT	DIOACTIVE LIQUID EFF	LUENT MC	NITORING	
	ENTATION SURVEILLA			
<u>11,011,011</u>	LITITION CONTRACTOR			-
Pri = Pri	mary Instruments, Alt =	= Alternate I	nstruments	
				CHANNEL
	CHANNEL	SOURCE	CHANN	
INSTRUMENT	CHECK	<b>CHECK</b>	CALIBRAT	TION TEST
1. Gross Radioactivity Monitor Prov	ding Alorm And Automatic 7	Cermination (	f Release	
	D -	P ⁽⁵⁾	R ⁽⁸⁾⁽³⁾	0 ^m
a. Liquid Waste Process Effluent Pri: (2SGC-RQ100)	D ·	P	K	Y
2. Flow Rate Measurement Devices				
a. Liquid Radwaste Effluent Pri: (2SGC-FS100)	D ⁽⁴⁾	NA	R	Q
b. Cooling Tower Blowdown Line	D ⁽⁴⁾	NA	R	Q
Pri: (FT-1CW-101-1) or Alt: (FT-1CW-101) and (2CW)	S-FT101)			
3. Tank Level Indicating Devices (fo	or tanks outside plant building	s)		
a. None Required				

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		Beaver Valley Power Station	Procedure Nu	mber:
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		ATTACHMENT E		
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		OCM CONTROLS: RETS INSTRUMENTATION FOR L	IQUID EF	FLUENTS
		TABLE 4.3-12 (continued)		
		TABLE NOTATION		
(1)	The C pathw	CHANNEL FUNCTIONAL TEST shall also demonstrate to yay and Control Room Alarm Annunciation occurs if any compared and the state of the s	hat automa of the follow	tic isolation of this wing conditions exist:
	1.	Instrument indicates measured levels above the alarm/tri	p setpoint.	
1	2.	Downscale failure.		
	3.	Instrument controls not set in operate mode.		
(2)	The C Annu	HANNEL FUNCTIONAL TEST shall also demonstrate the taxet of the following conditions exist:	hat Control	Room Alarm
	1.	Instrument indicates measured levels above the alarm/tri	p setpoint.	
	2.	Downscale failure.		
	3.	Instrument controls are not set in operate mode.		
(3)	The initial CHANNEL CALIBRATION for radioactivity measurement instrumentation shall be performed using one or more of the reference standards certified by the National Bureau of (Standards/NIST) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS/NIST. These standards should permit calibrating the system over its intended range of energy and rate capabilities. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration should be used, at intervals of at least once per 18 months. This can normally be accomplished during refueling outages. (Existing plants may substitute previously established calibration procedures for this requirement).			
(4)	CIA	INEL CHECK shall consist of verifying indication of flow INEL CHECK shall be made at least once daily on any day th releases are made.	y during per y on which	riods of release. continuous, periodic,
(5)	A SOU with a respon	JRCE CHECK may be performed utilizing the installed me portable source to obtain an upscale increase in the existin se.	eans or flas ig count rat	shing the detector te to verify channel

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

### TABLE 4.3-12 (continued)

### TABLE NOTATION

⁽⁶⁾ The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and Control Room Alarm Annunciation occurs when the instrument indicates measured levels above the Alarm/Trip Setpoint.

The CHANNEL FUNCTIONAL TEST shall also demonstrate that Control Alarm Annunciation occurs if any of the following conditions exists:

- 1. Downscale failure.
- 2. Instrument controls are not set in operate mode.
- ⁽⁷⁾ The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and Control Room Alarm Annunciation occurs if the instrument indicates measured levels above the alarm/trip setpoint.

The CHANNEL CALIBRATION shall also demonstrate that Control Room Alarm Annunciation occurs if either of the following conditions exist:

1. Downscale failure.

2. Instrument controls are not set in operate mode.

Station

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## ODCM: Controls for RETS and REMP Programs

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# ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

# CONTROLS: RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

3.3.3.10 In accordance with BV-1 and BV-2 Technical Specification 6.8.6a, Item 1, the radioactive gaseous effluent monitoring instrumentation channels shown in ODCM Control 3.3.3.10, Table 3.3-13 shall be operable with their alarm/trip setpoints set to ensure that the limits of ODCM CONTROL 3.11.2.1 are not exceeded. The alarm/trip setpoints of the radiation monitoring channels shall be determined in accordance with 1/2-ODC-2.02.

Applicability: During releases through the flow path.

Action:

- a. With a radioactive gaseous process or effluent monitoring instrumentation channel alarm/trip setpoint less conservative than a value which will ensure that the limits of ODCM CONTROL 3.11.2.1 are met, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or correct the alarm/trip setpoint.
- b. With one or more radioactive gaseous effluent monitoring instrumentation channels inoperable, take the ACTION shown in ODCM Control 3.3.3.10, Table 3.3-13 or conservatively reduce the alarm setpoint. Exert a best effort to return the channel to operable status within 30 days, and if unsuccessful, explain in the next Annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
- c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

## SURVEILLANCE REQUIREMENTS

4.3.3.10 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in ODCM Control 3.3.3.10, Table 4.3-13.

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le:			Unit: 1/2	Level Of Use: General Skill Reference				
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ODCM CO	Page ONTROLS: RETS INSTR	2 of 13 UMENT FOR GA	SEOUS RELI	EASES				
TABLE 3.3-13 BV-1 PADIOACTIVE CASEOUS FEELVENT MONITORING INSTRUMENTATION								
<b>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</b> Pri = Primary Instruments, Alt = Alternate Instruments								
	Pri = Primary Instrument		uments					
INST	RUMENT	MINIMUM CHANNELS OPERABLE	APPLICABI	JIY ACTION				
I. Gaseous Waste/Process a. Noble Gas Activity I Pri: (RM-1GW-108B	Monitor	(1)	*	27,29,30A,30B				
Alt For Continuous monitoring channel for Alt For Batch Relea monitoring channel for does not perform the	Release: (RM-1GW-109 Ch 5) or continuous releases via this pa ses: (See Action 27) RM-1GW- or batch releases of the BV-1 GW same automatic isolation functio the BV-1 GWDT's or the BV-2 C	thway. -109 Ch 5 SHALL NO VDT's or the BV-2 GW on as the primary chann	T be used as the VST's. Specificatel, THEN ACT	comparable alternate ally, <u>SINCE</u> this channel				
b. Particulate and Iodi	ne Sampler	(1)	*	32				
1st Alt: (Filter Paper	Charcoal Cartridge for RM-1GW- & Charcoal Cartridge for RM-10 collection via RASP Pump) or es every 12 hours)	-109) or 3W-110) or						
c. System Effluent Flo Pri: (FR-1GW-108) c Alt: (RM-1GW-109 (		(1)	*	28A				
	Measuring Device Used for	(1)	*	28B				
d. Sampler Flow Rate Sample Collection Pri: (RM-1GW-109 ( Alt: (Potometer: FM)	Ch 15) or							
Sample Collection Pri: (RM-1GW-109 C Alt: (Rotometer: FM-	Ch 15) or 1GW-101, and Vacuum Gauge: 1	PI-1GW-13)	)					
Sample Collection Pri: (RM-1GW-109 C Alt: (Rotometer: FM-	Ch 15) or 1GW-101, and Vacuum Gauge: ntilation System (VV-1; Also ca Monitor or	PI-1GW-13)	*	29,30A				
Sample Collection Pri: (RM-1GW-109 C Alt: (Rotometer: FM- 2. Auxiliary Building Ver a. Noble Gas Activity I Pri: (RM-1VS-101B) Alt: (RM-1VS-109 C b. Particulate and Iodi Pri: (Filter Paper & C 1st Alt: (Filter Paper	Ch 15) or 1GW-101, and Vacuum Gauge: ntilation System (VV-1; Also ca Monitor or h 5) ine Sampler Charcoal Cartridge for RM-1VS-1 & Charcoal Cartridge for RM-1VS-1 or Charcoal Cartridge for RM-1VS-1 or Collection via RASP Pump) or	PI-1GW-13) Illed Ventilation Vent (1) (1) 109) or	•					
Sample Collection Pri: (RM-1GW-109 C Alt: (Rotometer: FM- 2. Auxiliary Building Ver a. Noble Gas Activity I Pri: (RM-1VS-101B) Alt: (RM-1VS-109 C b. Particulate and Iodi Pri: (Filter Paper & C 1st Alt: (Filter Paper 2nd Alt: (Continuous 3rd Alt: (Grab sample	Ch 15) or -1GW-101, and Vacuum Gauge: -tillation System (VV-1; Also ca Monitor or h 5) ine Sampler Charcoal Cartridge for RM-1VS-1 & Charcoal Cartridge for RM-1VS-1 w Charcoal Cartridge for RM-1VS-1 w Rate Measuring Device	PI-1GW-13) Illed Ventilation Vent (1) (1) 109) or	*	29,30A				

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Beaver Valley Power Station       Procedure Number: 1/2-ODC-3.03         Title:       Unit:       Level Of Use: 1/2         ODCM: Controls for RETS and REMP Programs       Init:       Level Of Use: 1/2         ATTACHMENT F       Page 3 of 13         ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES         TABLE 3.3-13 (continued)         BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION         Pri = Primary Instruments,         Alt = Alternate Instruments         MINIMUM
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ODCM: Controls for RETS and REMP Programs       Revision:       Page Number:         ATTACHMENT F       Page 3 of 13         ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES         TABLE 3.3-13 (continued)         BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION         Pri = Primary Instruments,       Alt = Alternate Instruments
ATTACHMENT F Page 3 of 13 ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES <u>TABLE 3.3-13 (continued)</u> <u>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</u> Pri = Primary Instruments, Alt = Alternate Instruments
ATTACHMENT F Page 3 of 13 ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES <u>TABLE 3.3-13 (continued)</u> <u>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</u> Pri = Primary Instruments, Alt = Alternate Instruments
Page 3 of 13 ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES <u>TABLE 3.3-13 (continued)</u> <u>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</u> Pri = Primary Instruments, Alt = Alternate Instruments
ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES <u>TABLE 3.3-13 (continued)</u> <u>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</u> Pri = Primary Instruments, Alt = Alternate Instruments
TABLE 3.3-13 (continued)         BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION         Pri = Primary Instruments,       Alt = Alternate Instruments
<b>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</b> Pri = Primary Instruments, Alt = Alternate Instruments
<b>BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION</b> Pri = Primary Instruments, Alt = Alternate Instruments
Pri = Primary Instruments, Alt = Alternate Instruments
MINIMUM
CHANNELS
INSTRUMENT OPEDADLE ADDLET ADDLET
3. Reactor Building/SLCRS (CV-1; Also called Elevated Release)
a. Noble Gas Activity Monitor (1) * 20 30 A
Pf: (RM-1VS-10/B) or
Alt: (RM-1VS-110 Ch 5)
b. Particulate and Iodine Sampler (1) * 32
Pri: (Filter Paper & Charcoal Cartridge for RM-1VS-110) or
1st Alt: (Filter Paper & Charcoal Cartridge for RM-1VS-112) or 2nd Alt: (Continuous or Vestional Cartridge for RM-1VS-112) or
2nd Alt: (Continuous collection via RASP Pump) or 3rd Alt: (Grab samples every 12 hours)
c. System Effluent Flow Rate Measuring Device (1) * 28A Pri: (FR-1VS-112) or
Alt: (RM-1VS-112) or Alt: (RM-1VS-110 Ch 10)
d. Sampler Flow Rate Measuring (1) * 28B
Device Used for Sample Collection Pri: (RM-1VS-110 Ch 15) or
Alt: (Rotometer: FM-1VS-103) and Vacuum Gaugas DI 11/0 (CO)
- 14 (100010001 1 M21 VO-105, and Vacuum Gauge: P1-1 VS-000)
Alt: (Rotometer: FM-1VS-103, and Vacuum Gauge: PI-1VS-660)
*During Releases via this pathway.
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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES								
TABLE 3.3-13 (continued)								
<b>BV-2 RADIOACTIVE GASEOUS EFFLUENT M</b>	ONITORING	INSTRUM	<u>ENTATION</u>					
Pri = Primary Instruments, Alt	= Alternate In	struments						
CH	NIMUM ANNELS	APPLICABI	LITY ACTION					
<u>INSTRUMENT</u> <u>OP</u> SLCRS Unfiltered Pathway (VV-2; Also called Ventilation Vent	ERABLE I)	AFFLICADI						
a. Noble Gas Activity Monitor Pri: (2HVS-RQ101B)	(1)	*	<b>29, 30</b> B					
	(1)	*	32					
· · · ·	(1)	*	28A					
d. Sampler Flow Rate Monitor Used for Sample Collection Pri: (2HVS-FIT101)	(1)	*	28B					
SLCRS Filtered Pathway (CV-2; Also called Elevated Release)	(1)	*	29, 30B					
	(1) Flow Path) or	*	32					
c. Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS-FR22) or 1st Alt: (2HVS-FI22A and FI22C) or 2nd Alt: (2HVS-FI22B and FI22D)	(1)	*	28A					
d. Sampler Flow Rate Monitor Used for Sample Collection Pri: (Monitor Items 28 and 72 for 2HVS-DAU109B)	(1)	*	28B					
Decontamination Building Vent (DV-2)		•						
a. Noble Gas Activity Monitor Pri: (2RMQ-RQ301B)	(1)	*	29					
<ul> <li>b. Particulate and Iodine Sampler</li> <li>Pri: (Filter Paper &amp; Charcoal Cartridge for 2RMQ-RQ301) or</li> <li>1st Alt: (Continuous collection via RASP Pump)</li> <li>2nd Alt: (Grab samples every 12 hours)</li> </ul>	(1)	*	32					
c. Process Flow Rate Monitor	None	None	None					
d. Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT301)	(1)	*	28B					

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	TABLE 3.3-13			
	<b>BV-2 RADIOACTIVE GASEOUS EFFLUEN</b>	T MONITOR	ING INSTRU	<b>MENTATION</b>
	Pri = Primary Instruments,	Alt = Alternate	Instruments	
4. Co	INSTRUMENT ondensate Polishing Building Vent (CB-2)	MINIMUM CHANNELS OPERABLE	<u>APPLICABIL</u>	ITY ACTION
a.	Noble Gas Activity Monitor Pri: (2HVL-RQ112B)	(1)	*	29
b.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2HVL-RQ112) 1st Alt: (Continuous collection via RASP Pump) 2nd Alt: (Grab samples every 12 hours)	(1)	*	32
c.	Process Flow Rate Monitor	None	None	None
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2HVL-FIT112)	ı (1)	•	28B
5. W	aste Gas Storage Vault Vent (WV-2)			
а.	Noble Gas Activity Monitor Pri: (2RMQ-RQ303B)	(1)	*	29
b.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2RMQ-RQ303) 1st Alt: (Continuous collection via RASP Pump) 2nd Alt: (Grab samples every 12 hours)	(1)	*	32
c.	Process Flow Rate Monitor	None	None	None
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT303)	(1)	*	28B

*During Releases via this pathway.

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(	DDCM	Page 6 of 13 CONTROLS: RETS INSTRUMENT FOR GAS	EOUS RE	LEASES
·		TABLE 3.3-13 (continued)		
		ACTION STATEMENTS		
Action 27		LICABLE FOR BATCH RELEASES OF BV-1 G. KS OR BV-2 GASEOUS WASTE STORAGE TA		WASTE DECAY
	OPE (GW)	the number of channels OPERABLE less than req RABLE requirement, the contents of the Unit 1 Ga DT's) or the Unit 2 Gaseous Waste Storage Tanks onment provided that prior to initiating the release	aseous Wa (GWST's)	ste Decay Tanks
	1.	At least two independent samples of the tank's of two technically qualified members of the Facilit release rate calculations and discharge valve lin	ty Staff ind	analyzed and at least lependently verify the
	2.	Initiate continuous monitoring with the compar- ODCM Surveillance requirements applicable to to the comparable alternate monitoring channel Control requirement.	the inope	rable channel shall apply
	Othe	rwise, suspend releases of radioactive effluents via	a this pathy	way.
Action 28A	_	LICABLE FOR BV-1 SYSTEM EFFLUENT FLC ICES OR BV-2 PROCESS FLOWRATE MONIT		MEASURING
	With OPE	the number of channels OPERABLE less than rea RABLE requirement, effluent releases via this pat	quired by t hway may	he Minimum Channels continue provided:
	1.	The system/process flow rate is estimated at lease be at the ODCM design value ⁽¹⁾ ), or	ist once pe	r 4 hours (or assumed to
	2.	Initiate continuous monitoring with the compar ODCM Surveillance requirements applicable to to the comparable alternate monitoring channel Control requirement.	o the inope	rable channel shall apply
⁽¹⁾ In lie flow	rate ca 1,45	timating the system/process flow rate at least once n be assumed to be at the following ODCM design 50 cfm = BV-1 Gaseous Waste/Process Vent Syste	n values: em (PV-1,2	2)
	49,3 23,7	00 cfm = BV-1 Auxiliary Building Ventilation Sys 00 cfm = BV-1 Reactor Building/SLCRS (CV-1) 00 cfm = BV-2 SLCRS Unfiltered Pathway (VV-2) 00 cfm = BV-2 SLCRS Filtered Pathway (CV-2)		1)

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	UDCI	M CONTROLS: RETS INSTRUMENT FOR G	ASEOUS REI	LEASES
		TABLE 3.3-13 (continued)		
		ACTION STATEMENTS		
Action 28B	<u>APF</u>	LICABLE FOR BV-1 SAMPLER FLOW RATE	EMEASURI	G DEVICES OF BY-
	<u>2 S</u> A	AMPLER FLOWRATE MONITORS		IC DEVICES ON DV-
	With	h the number of channels ODED ADI IT I		
	OPE	h the number of channels OPERABLE less than a RABLE requirement effluent releases win this	required by th	e Minimum Channels
		RABLE requirement, effluent releases via this p	athway may c	ontinue provided:
	1.	The sampler flow rate is estimated at least on	ce per 4 hours	, or
	2.	Initiate continuous monitoring with the comp		
		ODCM Surveillance requirements applicable	to the increase	te monitoring channel.
		to the comparable alternate monitoring chann	el when wood	to extinct the opping
		Control requirement.	ci when used	to satisfy this ODCM
Action 29	<u>APP</u>	LICABLE FOR CONTINUOUS RELEASES		
				·
		the number of channels OPERABLE less than r	equired by the	e Minimum Channels
	OPE	RABLE requirement, effluent releases via this pa	athway may co	ontinue provided:
	1.	Grab samples (or local monitor readings) ⁽¹⁾ are	e taken at leas	t once per 12 hours. If
		grab samples are taken, these samples are to b	e analyzed for	a once per 12 nours. If
		24 hours, or	c analyzeu 10	gross activity within
	2.	·		
	2.	Initiate continuous monitoring with the compa	arable alternat	e monitoring channel.
		ODCIVI Surveillance requirements applicable	to the inoneral	hle channel shall apply
		to the comparable alternate monitoring channel	el when used t	o satisfy this ODCM
		CONTROL requirement.		·
(l) Eor D	0.0 4			
LOI D	v-2, th	ere are situations where the local monitor (e.g.; t	he RM-80) is	capable of performing
	ondou	monitoring function, but the communications are	a lost to the C	ontrol Doom In this
0000,0		in monitor can be read at least once per 12 hours	in-lieu of obta	uning grab samples at
least o	nce pe	r 12 hours		o o o o omitios at

and and and the state

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		TABLE 3.3-13 (continue	<u>d)</u>						
		ACTION STATEMENT	<u>rs</u>						
	Action 30A	APPLICABLE FOR THE INITIAL BATCH PUI	RGE OF THE B	V-1 REACTOR					
		CONTAINMENT			۶				
		With the number of channels <b>OPERABLE</b> less th			ج ا				
		OPERABLE requirement, immediately suspend this pathway if both RM-VS-104A and B are not	PURGING of Re	the purge/exhaust	1				
		system in service. The following should also be		ai aio haiteoriaast					
		1. As stated, this Action is applicable for IN	OPER ABLE mo	nitors only when					
		performing the initial batch purge of the r							
		immediately after reactor containment atr	nosphere equaliz	zation).					
		2. Since all other releases of reactor contain	ment atmosphere	e (i.e.; after the initial					
•		batch purge) are considered continuous re							
		applicable. Therefore, Action 29 is appli performing a continuous release of the re							
	Action 30B	APPLICABLE FOR THE INITIAL BATCH PU	RGE OF THE B	V-2 REACTOR					
	ACTION 20D	<u>CONTAINMENT</u>	KOL OI IIIL D						
		With the number of channels OPERABLE less the	han required by l	Minimum Channels					
		OPERABLE requirement, immediately suspend	PURGING of R	eactor Containment via					
		this pathway if both 2HVR-RQ104A and 104B a							
		purge/exhaust system in service. The following							
		1. As stated, this Action is applicable for IN							
	• .	performing the initial batch purge of the initial batch purge of the inmediately after reactor containment at							
		·							
		2. Since all other releases of reactor contain batch purge) are considered continuous releases							
		applicable. Therefore, Action 29 is appli	icable for INOPE	ERABLE monitors when					
		performing a continuous release of the re	actor containme	nt atmosphere.					
	Action 32	APPLICABLE FOR CONTINUOUS RELEASE	<u>2S</u>						
ć		With the number of channels OPERABLE less t	han required by	the Minimum Channels					
		OPERABLE requirement, effluent releases via t	his pathway may	continue provided					
		samples are continuously collected with auxiliar ODCM Control 3.11.2.1, Table 4.11-2, or sample							

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	Deni Controls. All			EOUS RELE	ASES
	BV-1 PADIOACTI	TABLE 4.3			
	<u>BV-1 RADIOACTI</u> INSTRUMENTAT	TION SURVEILL	ANCE REQUIRI	EMENTS	
		Instruments, Alt =			
I	<u>NSTRUMENT</u>	CHANNEL <u>CHECK</u>	SOURCE CHECK	CHANNE <u>CALIBRAT</u>	
	Process Vent System (PV-1,2)				<u></u>
Pri: (RM-1		Р	P ⁽⁴⁾	R ⁽³⁾	Q ⁽¹⁾
Alt For Co	ntinuous Release: (RM-1GW-109) continuous releases via this pathway	Ch5) This channel n	nay only be used as	s the comparable	alternate monitoring
Alt For Ba channel for same auton GWDT's or	tch Releases: (See Action 27): RM batch releases of the BV-1 GWDT's natic isolation function as the primary the BV-2 GWST's via this pathway	-1GW-109 Ch 5 SH	e Sneetheally VII	NICE this shame a	data wat wat a sile was d
Pri: (Filter) 1st Alt: (Fil	and Iodine Sampler Paper & Charcoal Cartridge for RM-1 ter Paper & Charcoal Cartridge for R Continuous collection via RASP P	M-1GW-110) or	NA	NA	NA
3rd Alt: (C	irab samples every 12 hours)	ump) or			
Pri: (FR-1G	luent Flow Rate Measuring Device W-108) or GW-109 Ch 10)	Р	NA	R	Q
Used for Sa Pri: (RM-10	ow Rate Measuring Device Imple Collection GW-109 Ch 15) or	D*	NA	R	Q
2. Auxiliary Build	eter: FM-1GW-101, and Vacuum Ga ing Ventilation System (VV-1; Also	uge: PI-1GW-13) called Ventilation V	Vent)		
a. Noble Gas . Pri: (RM-1)	Activity Monitor /S-101B) or /S-109 Ch 5)	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾	Q ⁽²⁾
Pri: (Filter I lst Alt: (Filt 2nd Alt: (G 3rd Alt: (G	and Iodine Sampler Paper & Charcoal Cartridge for RM-1 er Paper & Charcoal Cartridge for RI Continuous collection via RASP Parab samples every 12 hours)	M-1VS-111) or ump) or	NA	NA	NA
Pri: (FR-1V	uent Flow Rate Measurement Devie S-101) or /S-109 Ch 10)	ce D	NA	R	Q
Used for Sa Pri: (RM-1)	ow Rate Measuring Device mple Collection 'S-109 Ch 15) or eter: FM-1VS-102, and Vacuum Gau	D ge: PI-1VS-659)	NA	R	Q
* During Releases v	ia this pathway. of Reactor Containment via this path				

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B 8 MAY -			1/2		Skill Reference
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	TABLE 4.3-	<u>13</u>			
<b>BV-1 RADIOACTIV</b>	E GASEOUS E	FFLUENT M	IONITORIN	G	
INSTRUMENTATI					
Pri = Primary Ins					
FII = FIIIIal y III	suuments, Alt =	- Antemate III	su unicito		011 A > D
		SOURCE	CHANN	<b>EI E</b>	CHANNEL UNCTIONAL
INSTRUMENT	CHANNEL CHECK	<u>CHECK</u>	CALIBRA		TEST
3. Reactor Building/SLCRS (CV-1; Also called a. Noble Gas Activity Monitor	D	M ⁽⁴⁾ ,	R ⁽³⁾		O ⁽²⁾
Pri: (RM-1VS-107B)or	D	P ⁽⁴⁾ ***	X		×
Alt: (RM-1VS-110 Ch 5)					
b. Particulate and Iodine Sampler	W	NA	NA		NA
Pri: (Filter Paper & Charcoal Cartridge for					(
1st Alt: (Filter Paper & Charcoal Cartridge		or			
2nd Alt: (Continuous collection via RASP 3rd Alt: (Grab samples every 12 hours)	rump) or				
	D	NA	R		° Q
c. System Effluent Flow Rate Measuring Device	D	NA	K		× v
Pri: (FR-1VS-112) or					
Alt: (RM-1VS-110 Ch 10)					
d. Sampler Flow Rate Measuring Device	D	NA	R		Q
Used for Sample Collection					
Pri: (RM-1VS-110 Ch 15) or Alt: (Rotometer: FM-1VS-103, and Vacuu	m Gauge: PL-1VS-0	560)			
Alt. (Notomotor, 1747-1 45-105, and Vacuu	III Jaugo. I I-I 70-0				
*During releases via this pathway.	alia alia anti-				
***During purging of Reactor Containment	via this pathway.				

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	ODCM CONTROLS: RET	S INSTRUMENT		EOUS RELEA	SES
		ABLE 4.3-13 (cor			
	<u>BV-2 RADIOACTT</u> INSTRUMENTAT	<u>VE GASEOUS EF</u> ION SURVEILLA	FLUENT MO	NITORING REMENTS	
	Pri = Primary Inst		= Alternate In		
					CHANNEL
1.5	INSTRUMENT LCRS Unfiltered Pathway (VV-2; Also call	CHANNEL <u>CHECK</u> ed Ventilation Vent	SOURCE <u>CHECK</u>	CHANNEL <u>CALIBRATI(</u>	FUNCTIONAL
a.	. Noble Gas Activity Monitor Pri: (2HVS-RQ101B)	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾⁽⁶⁾	Q(5)
	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 1st Alt: (Continuous collection via RASP P 2nd Alt: (Grab samples every 12 hours)	W 2HVS-RQ101) or ump) or	NA	NA	NA
	Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS-VP101)	D	NA	R	Q
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2HVS-FIT101)	D	NA	R	Q
2.SI	LCRS Filtered Pathway (CV-2; Also called	Elevated Release)			(
а.	Pri: (2HVS-RQ109B)	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾⁽⁶⁾	Q ⁽³⁾
D.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2 1st Alt: (Continuous collection via RASP Pa 2nd Alt: (Grab samples every 12 hours)	W 2HVS-RQ109 High I 2mp) or	NA Iow Path) or	NA	NA
с. )	Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS-FR22) or 1st Alt: (2HVS-FI22A and FI22C) or 2nd Alt: (2HVS-FI22B and FI22D)	D	NA	R	Q
đ.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (Monitor Items 28 and 72 for 2HVS-DA	D 10109B)	NA	R	Q
а.	contamination Building Vent (DV-2) Noble Gas Activity Monitor Pri: (2RMQ-RQ301B)	D	M ⁽⁴⁾	R ⁽³⁾⁽⁶⁾	Q ⁽³⁾
ь. 	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2 1st Alt: (Continuous collection via RASP Pu 2nd Alt: (Grab samples every 12 hours)	W RMQ-RQ301) or mp) or	NA	NA	NA
с.	Process Flow Rate Monitor	NA	NA	NA	Į NA
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT301)	D	NA	R	Q

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	Beaver Valley Powe	er Station		Procedure Num 1		C-3.03
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		BLE 4.3-13 (con				
	<u>BV-2 RADIOACTIVI</u> INSTRUMENTATIO					
	Pri = Primary Inst	ruments, Alt =	Alternate Ir	struments		
	INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHANI <u>CALIBRA</u>		CHANNEL FUNCTIONAL <u>TEST</u>
4. Cond	lensate Polishing Building Vent (CB-2)					
	Noble Gas Activity Monitor Pri: (2HVL-RQ112B)	D	M ⁽⁴⁾	R ⁽³⁾⁽	5)	Q ⁽⁵⁾
F 1	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 1st Alt: (Continuous collection via RASP P 2nd Alt: (Grab samples every 12 hours)		NA	NA		NA
	Process Flow Rate Monitor	NA	NA	NA	•	NA
5	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2HVL-FIT112)	D	NA	R		Q
5. Wast	te Gas Storage Vault Vent (WV-2)					
	Noble Gas Activity Monitor Pri: (2RMQ-RQ303B)	D	M ⁽⁴⁾	R ⁽³⁾⁽	9	Q ⁽⁵⁾
	Particulate and Iodine Samples Pri: (Filter Paper & Charcoal Cartridge for 1st Alt: (Continuous collection via RASP F 2nd Alt: (Grab samples every 12 hours)		NA	NA	•	NA
<b>c</b> . 1	Process Flow Rate Monitor	NA	NA	NA	L .	NA
<b>i</b> :	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT303)	D	NA	R		Q

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### TABLE 4.3-13 (continued)

### **TABLE NOTATION**

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and Control Room Alarm Annunciation occurs if any of the following conditions exist:

- a. Instrument indicates measured levels above the alarm/trip setpoint.
- b. Downscale failure.
- c. Instrument controls not set in operate mode.

⁽²⁾ The CHANNEL FUNCTIONAL TEST shall also demonstrate that Control Room Alarm Annunciation occurs if any of the following conditions exist:

- a. Instrument indicates measured levels above the alarm/trip setpoint.
- b. Downscale failure.
- c. Instrument controls not set in operate mode.
- (3) The initial CHANNEL CALIBRATION for radioactivity measurement instrumentation shall be performed using one or more of the reference standards certified be National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards should permit calibrating the system over its intended range of energy and rate capabilities. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration should be used, at intervals of at least once per 18 months. This can normally be accomplished during refueling outages.
- ⁽⁴⁾ A SOURCE CHECK may be performed utilizing the installed means or flashing the detector with a portable source to obtain an upscale increase in the existing count rate to verify channel response.
- ⁽⁵⁾ The CHANNEL FUNCTIONAL TEST shall also demonstrate that Control Room Alarm Annunciation occurs if the instrument indicates measured levels above the alarm/trip setpoint.
- ⁽⁶⁾ The CHANNEL CALIBRATION shall also demonstrate that Control Room Alarm Annunciation occurs if either of the following conditions exist:
  - 1. Downscale failure.
  - 2. Instrument controls are not set in operate mode.

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	CONTROLS:	LIQUID EFFLUENT CONCENTRATION			
				······································	
	3.11.1.1 In accordance with BV-1 and BV-2 Technical Specification 6.8.6a, Items 2 and 3, the concentration of radioactive material released at any time from the site (see 1/2-ODC-2.01, Figure 5-1) shall be limited to 10 times the EC's specified in 10 CFR Part 20, Appendix B (20.1001-20.2401), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. This is referred to as the ODCM Effluent Concentration Limit (OEC). For dissolved or entrained noble gases, the concentration shall be limited to 2E-4 uCi/ml total activity.				
	Applicability:	At all times.			
	Action:				
	a. With the concentration of radioactive material released from the site to unrestricted areas exceeding the above limits; immediately restore the concentration within the above limits, and				
	b. Submit a Special Report to the Commission within 30 days in accordance with 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1).				
	c. The provisions of ODCM CONTROL 3.0.3 are not applicable.				
	SURVEILLA	NCE REQUIREMENTS			
			······		
	4.11.1.1.1	Radioactive liquid wastes shall be sampled and analyze analysis program of ODCM Control 3.11.1.1, Table 4.1		g to the sampling and	
	4.11.1.1.2	The results of radioactive analysis shall be used in acco assure that the concentration at the point of release are n ODCM CONTROL 3.11.1.1.			
	4.11.1.1.3	When BV-1 primary to secondary leakage exceeds 0.1 g Turbine Building Sump shall be obtained every 8 hours Building Sump concentration does not exceed 1 OEC. is reached, the Turbine Building Sump shall be routed to	to ensure Once it is	that the Turbine determined that an OEC	

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SURVEILLANCE REQUIR	EMENTS (continued)		
Building Sum is reached, the	rimary to secondary leakage exceed ing Sump shall be obtained every 8 p concentration does not exceed 1 ( Turbine Building Sump shall be ro GC-TK21A or 2SGC-TK21B).	hours to ensure to DEC. Once it is o	that the Turbine letermined that an OEC
basin 16, a gra sensitivity of a	V-2 Recirculation Drain Pump(s) (2 ap sample will be taken. The sampl at least 1E-7 uCi/ml. Water volume np operations unless alternate flow	es will be analyz discharged shall	ed for gross activity at a be estimated from the
	· · ·		
			ĺ
as specified in ODCM SURVEII	normally via batch modes. BV-1 and BV LANCE REQUIREMENT 4.11.1.1.3 and ed as specified in ODCM SURVEILLANC	4.11.1.1.4. The BV	-2 Recirculation drain
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### TABLE 4.11-1

### RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

		· · · ·		
				LOWER
		MINIMUM	TYPE OF	LIMIT OF
LIQUID	SAMPLING	ANALYSIS	ACTIVITY	DETECTION
<b>RELEASE TYPE</b>	FREQUENCY	FREQUENCY	ANALYSIS	(LLD)
				(uCi/ml) ^(a)
A. Batch Waste	Р	Р	Principal Gamma	5E-7
Release Tanks ^(d)	Each Batch ^(b)	Each Batch ^(h)	Emitters ^(f)	
			I-131	1E-6
	Р	М	Dissolved And	1E-5
	One		Entrained Gases	
	Batch/M ^(h)		(Gamma Emitters)	
	Р	М	H-3	1E-5
	Each Batch ^(h)	Composite ^(b)	Gross Alpha	1E-7
	Р	Q	Sr-89, Sr-90	5E-8
	Each Batch ^(h)	Composite ^(b)	Fe-55	1E-6
B. Continuous	Grab Sample ^(g)	W	Principal Gamma	5E-7
Releases ^{(e)(g)}		Composite ^(c)	Emitters ^(f)	
		-	I-131	1E-6
	Grab Sample ^(g)	M	Dissolved And	1E-5
	_		Entrained Gases	
			(Gamma Emitters)	
	Grab Sample ^(g)	M	H-3	1E-5
		Composite ^(c)	Gross Alpha	1E-7
	Grab Sample ^(g)	Q	Sr-89, Sr-90	5E-8
	_	Composite ^(c)	Fe-55	1E-6

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## ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION

### TABLE 4.11-1 (continued)

### **TABLE NOTATION**

(a) The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

 $LLD = \underline{4.66 \text{ Sb}}$ (E)(V)(2.22)(Y) exp(- $\lambda\Delta T$ )

where:

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume);

 $S_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute);

E is the counting efficiency (as counts per transformation);

V is the sample size (in units of mass or volume);

2.22 is the number of transformations per minute per picocurie;

Y is the fractional radiochemical yield (when applicable);

 $\lambda$  is the radioactive decay constant for the particular radionuclide;

 $\Delta T$  is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of  $S_b$  used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. Typical values of E, V, Y and  $\Delta T$  should be used in the calculations.

The LLD is defined as an <u>a priori</u> (before the fact) limit representing the capability of a measurement system and not as <u>a posteriori</u> (after the fact) limit for a particular measurement.

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### TABLE 4.11-1 (continued)

### TABLE NOTATION

- (b) A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.
- ^(c) To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.
- ^(d) A batch release exists when the discharge of liquid wastes is from a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.
- (e) A continuous release exists when the discharge of liquid wastes is from a non-discrete volume; e.g., from a volume of a system having an input flow during the continuous release. Releases from the Turbine Building Drains and the AFW Pump Bay Drain System and Chemical Waste Sump are considered continuous when the primary to secondary leak rate exceeds 0.1 gpm (142 gpd).
- (f) The principal gamma emitters for which the LLD specification will apply are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should be reported as "less than" the nuclide's LLD, and should not be reported as being present at the LLD level for that nuclide. The "less than" values should not be used in the required dose calculations. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Annual Radioactive Effluent Release Report.
- ^(g) When radioactivity is identified in the secondary system, a RWDA-L should be prepared on a monthly basis to account for the radioactivity that will eventually be discharged to the Ohio River.
- ^(h) Whenever the BV-2 Recirculation Drain Pump(s) are discharging to catch basin 16, sampling will be performed by means of a grab sample taken every 4 hours during pump operation.

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	· · · · · ·						
3.11.1.2	Tn oo			_			
J.11.1.2	dose	cordance with BV-1 and BV-2 Technical Spec	cification 6.8.6	a, Items 4 and 5, the			
	in lia	or dose commitment to MEMBER(S) OF TH	E PUBLIC from	n radioactive materials			
	limite	uid effluents released from the reactor unit (se	e 1/2-ODC-2.0	11 Figure 5-1) shall be			
	a.	During any calendar quarter to less than or	equal to 1.5 mm	em to the total body and			
		to less than or equal to 5 mrem to any organ	and	on to the total body and			
		,					
	<b>b</b> .	During any calendar year to less than or equ	al to 3 mrem to	the total body and to			
		less than or equal to 10 mrem to any organ.					
<u>Applicabilit</u>	v: A	t all times.					
	<u>,</u>		•				
Action:							
*****							
a. With	the calc	culated dose from the release of radioactive m	aterials in liqui	d effluents exceeding			
any	of the ab	ove limits, prepare and submit to the Commis	sion within 30	days, pursuant to 10			
CFR	20.2203	8(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Re	eport which ide	ntifies the cause(s) for			
exce	eding the	e limit(s) and defines the corrective actions to	be taken to red	uce the releases, and			
ine p	roposed	corrective actions to be taken to assure the su	bsequent releas	es will be within the			
abov	above limits. (This Special Report shall also include (1) the results of radiological analyses of						
	the drinking water source and (2) the radiological impact on finished drinking water supplies						
with	with regard to the requirements of 40 CFR 141, Safe Drinking Water Act).*						
b. The provisions of ODCM CONTROL 3.0.3 are not applicable.							
SURVEILLANCE REQUIREMENTS							
4 11 1 0 1			·····				
4.11.1.2.1							
	aeterr	nined in accordance with 1/2-ODC-2.01 at least	ast once per 31	days.			

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* Applicable only if drinking water supply is taken from the receiving water body within three miles of the plant discharge (three miles downstream only).

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Į	B	Beaver Valley Power Station	Procedure Number: 1/2-ODC-3.03						
	Title:		Unit: 1/2	Level Of Use: General Skill Reference					
	ODCM: Contr	ols for RETS and REMP Programs	Revision:	Page Number: 51 of 75					
		ATTACHMENT I							
	Page 1 of 1								
	ODCM CONTROLS: LIQUID RADWASTE TREATMENT SYSTEM								
	CONTROLS: LIQUID RADWASTE TREATMENT SYSTEM								
	3.11.1.3	In accordance with BV-1 and BV-2 Technical Specifica Radwaste Treatment System shall be used to reduce the liquid waste batch prior to its discharge when the project releases from the reactor unit (see 1/2-ODC-2.01 Figure would exceed 0.06 mrem to the total body or 0.2 mrem	radioactive sted doses d s 5-1) when	e materials in each ue to liquid effluent averaged over 31 days					
	Applicability:	At all times.							
	Action:								
a. With liquid waste being discharged without treatment and exceeding the limits specified, prand submit to the Commission within 30 days pursuant to 10 CFR 20.2203(a)(2)(v) and 10 50.4(b)(1) a Special Report which includes the following information:									
	1.	Identification of the inoperable equipment or subsystem	ns and the r	eason for inoperability.					
	2. Action(s) taken to restore the inoperable equipment to operational status, and								
	3. Summary description of action(s) taken to prevent a recurrence.								
	b. The p	rovisions of ODCM CONTROL 3.0.3 are not applicable.							
	4.11.1.3.1	Doses due to liquid releases shall be projected at least of with 1/2-ODC-2.01.	once per 31	days, in accordance					
	1								

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and a second second

	Beaver Valley Power Station	ower Station Procedure Number: 1/2-ODC-3.03						
Title:	Unit: Level Of Use		Level Of Use:					
ODCM: Co	ntrols for RETS and REMP Programs	1/2 Revision:	General Skill Reference Page Number:					
		2	52 of 75					
	ATTACHMENT J Page 1 of 1							
	ODCM CONTROLS: LIQUID HOLDUP TANKS							
	·							
	S: LIQUID HOLDUP TANKS							
3.11.1.4	In accordance with BV-1 and BV-2 Technical Specification radioactive material contained in each of the following listed below, excluding tritium and dissolved or entrational dissolved dissolv	ng tanks shall	be limited to the value					
	<ul> <li>a. ≤ 10 Curies: BR-TK-6A (Unit 1 Primary Water</li> <li>b. ≤ 10 Curies: BR-TK-6B (Unit 1 Primary Water)</li> <li>c. ≤ 10 Curies: LW-TK-7A (Unit 1 Steam Generated)</li> <li>d. ≤ 10 Curies: LW-TK-7B (Unit 1 Steam Generated)</li> <li>e. ≤ 4.2 Curies: QS-TK-1 (Unit 1 Refueling Water)</li> <li>f. ≤ 4.2 Curies: 2QSS-TK21 (Unit 2 Refueling Water)</li> <li>g. ≤ 10 Curies: Unit 1 and Unit 2 miscellaneous tenstorage tanks.</li> </ul>	Storage Tank) or Drain Tank or Drain Tank Storage Tank tter Storage Ta	) ;) ;-RWST) ank-RWST)					
APPLICAB	ILITY: At all times.							
ACTION:								
	a. With the quantity of radioactive material in any o the above limit, immediately suspend all addition and within 48 hours reduce the tank contents to w	s of radioactiv	ve material to the tank					
	b. Submit a Special Report in accordance with 10 C include a schedule and a descritpion of activities contents to within the specific limits.	FR 50.4 (b) (1	I) within 30 days and					
	c. The provisions ODCM Control 3.0.3 are not appl	M Control 3.0.3 are not applicable.						
SURVEILL	ANCE REQUIREMENTS	· . ·						
• <u> </u>								
4.11.1.4.1	The quantity of radioactive material contained in each the Unit 1 and 2 RWST's) shall be determined to be w representative sample of the tank's contents at least of materials are being added to the tank.	vithin the abo	ve limit by analyzing a					
4.11.1.4.2	<u>SINCE</u> additions of radioactive material to the Unit 1 at the end of a refueling outage (i.e.; drain down of th <u>THEN</u> compliance to this limit shall be performed as	e reactor cavi	"s are normally made ty back to the RWST)					
	The quantity of radioactive material contained in the determined to be within the above limit by analyzing contents within 7 days after transfer of reactor cavity	Unit 1 and 2 F a representativ	ve sample of the tank's					

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Unit: 1/2 Revision: 2 OSE RATE ation 6.8.6a, igure 5-1) d all be limited mrem/yr to	/2-ODC-3.03 Level Of Use: General Skill Reference Page Number: 53 of 75 , Items 3 and 7, the ue to radioactive d to the following the total body and ≤				
Revision: 2 OSE RATE ation 6.8.6a, igure 5-1) d all be limited mrem/yr to	Page Number: 53 of 75 , Items 3 and 7, the ue to radioactive d to the following				
OSE RATE	53 of 75 53 of 75 53 of 75 54 54 55 53 of 75 55 56 56 56 56 56 56 56 56 56 56 56 56				
ation 6.8.6a, igure 5-1) d all be limited mrem/yr to	, Items 3 and 7, the ue to radioactive d to the following				
igure 5-1) d all be limited mrem/yr to	ue to radioactive d to the following				
igure 5-1) d all be limited mrem/yr to	ue to radioactive d to the following				
	the total body and $\leq$				
121					
<ul> <li>3000 mrem/yr to the skin*, and</li> <li>b. The dose rate limit, inhalation pathway only, for I-131, tritium and all radionuclides in particulate form (excluding C-14) with half-lives greater t eight days shall be ≤ 1500 mrem/yr to any organ.</li> </ul>					
•					
	·				
ecrease the 1	release rate to comply				
uant to 10 C	CFR 20.2203(a)(2)(v)				
etermined to	o be within the above				
er than eigh mits in acco presentative	adionuclides in t days in gaseous ordance with the e samples and program specified in				
s 1 vti	suant to 10 C determined to um and all ra ter than eigh imits in acco epresentative				

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*During containment purge the dose rate may be averaged over 960 minutes.

Title:

ODCM:	Controls	for	RETS	and	REMP	Programs
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1/2-ODC-3.03				
Unit:	Level Of Use:			
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### ATTACHMENT K

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## ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

### TABLE 4.11-2

## RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

	T	LIMMORT	<u>г                                    </u>	Tomme Te an
		MINIMUM		LOWER LIMIT
	SAMPLING	ANALYSIS	TYPE OF	OF DETECTION
GASEOUS	FREQUENCY	FREQUENCY	ACTIVITY	$(LLD) (uCi/ml)^{(a)}$
RELEASE TYPE			ANALYSIS	
A. Waste Gas	P	Р	Principal	1E-4
Storage Tank	Each Tank	Each Tank	Gamma	
	Grab Sample		Emitters ^(g)	
	Each Tank*	Each Tank*	H-3*	1E-6
	Grab Sample			
B. Containment	P	P	Principal Gamma	1E-4
Purge	Each Purge ^(b)	Each Purge ^(b)	Emitters ^(g)	
	Grab Sample		H-3	1E-6
C. Ventilation	M ^{(b)(c)(e)}	M ^(b)	Principal Gamma	1E-4
Systems ^(h)	Grab Sample		Emitters ^(g)	
VV-1			H-3	1E-6
CV-1				
PV-1/2				
VV-2				
CV-2				
DV-2				
WV-2				
CB-2				
·				

* The H-3 concentration shall be estimated prior to release and followed up with an H-3 grab sample from the Ventilation System during release.

Title:

ODCM:	Controls	for RETS	and REMP	Programs
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Tocedure Nu	mber:
	1/2-ODC-3.03
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### ATTACHMENT K Page 3 of 4 ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

## TABLE 4.11-2 (continued)

# RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

		MINIMUM	TYPE OF	LOWER LIMIT
GASEOUS	SAMPLING	ANALYSIS	ACTIVITY	OF DETECTION
RELEASE TYPE	FREQUENCY	FREQUENCY	ANALYSIS	$(LLD) (uCi/ml)^{(a)}$
D. All Systems	Continuous ⁽ⁱ⁾	W ^(d)	I-131	1E-12
Listed Above		Charcoal	I-133	1E-10
Which Produce		Sample		
Continuous				
Release	Continuous ^(f)	W ^(d)	Principal Gamma	1E-11
		Particulate	Emitters ^(g)	
		Sample	(I-131, Others)	
	Continuous ^(f)	M	Gross Alpha	1E-11
		Composite		
1		Particulate		
		Sample		
	Continuous ^(f)	Q	Sr-89, Sr-90	1E-11
		Composite		
		Particulate		
		Sample		
	Continuous ^(f)	Noble Gas	Noble Gases	1E-6
		Monitor	Gross Beta And	
			Gamma	

Beaver	Valley	Power	Station
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Procedure Nur	nber:		
1/2-ODC-3.03			
Unit:	Level Of Use:		
1/2 General Skill Reference			
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### ODCM: Controls for RETS and REMP Programs

Title:

#### ATTACHMENT K Page 4 of 4 ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

#### TABLE 4.11-2 (continued)

#### **TABLE NOTATION**

(a)	The Lower Limit of Detection (LLD) is defined in Table Notation (a) of ODCM Control 3.11.1.1,
	Table 4.11-1 for ODCM Surveillance Requirement 4.11.1.1.

(b) Sampling and analysis shall also be performed following SHUTDOWN, STARTUP, or a THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1 hour period. This requirement does not apply if (1) analysis shows that the Dose Equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

All samples or surveillances used to satisfy note^b above shall be obtained within 24 hours of reaching the intended steady state power level, and analyzed within 48 hours of reaching the intended steady state power level.

# ^(c) Tritium grab samples shall be taken at least once per 24 hours (from the appropriate ventilation release path) when the refueling canal is flooded.

(d) Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler. Sampling shall also be performed at least once per 24 hours for at least 7 days following each SHUTDOWN, STARTUP, or THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1 hour period and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

(e) Tritium grab samples shall be taken at least once per 7 days (from the appropriate ventilation release path of the spent fuel pool area) whenever spent fuel is in the spent fuel pool.

⁽⁰⁾ The average ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with ODCM CONTROLS 3.11.2.1, 3.11.2.2, and 3.11.2.3.

- (g) The principal gamma emitters for which the LLD specification will apply are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Annual Radioactive Effluent Release Report.
- ^(b) Only when this release path is in use.

ītle:	eaver Valley Power Station s for RETS and REMP Programs	Unit: <u>1/2</u> Revision:	1/2-ODC-3.03 Level Of Use: General Skill Reference Page Number:
DDCM: Control	s for RETS and REMP Programs		Page Number:
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. <b>.</b>	ATTACHMENT L Page 1 of 1 ODCM CONTROLS: DOSE- NOBLE GA	ASES	
CONTROLS: D	OOSE-NOBLE GASES		
Ċ	In accordance with BV-1 and BV-2 Technical Specification from the reactor unit in unrestricted areas (see 1/2 noble gases released in gaseous effluents shall be limited	-ODC-2.02	Figure 5-1) due to
8	During any calendar quarter, to $\leq 5$ mrad for game beta radiation.	ma radiatio	on and $\leq 10$ mrad for
١	b. During any calendar year, to $\leq 10$ mrad for gamm radiation.	na radiation	and ≤ 20 mrad for beta
Applicability:	At all times.		
Action:			
above lim 20.2203(a exceeding	calculated air dose from radioactive noble gases in gase its, prepare and submit to the Commission with in 30 e a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report which the limit(s) and defines the corrective actions taken to corrective actions to be taken to assure the subsequent	days, pursu h identifies o reduce the	ant to 10 CFR the cause(s) for releases and the
b. The provi	isions of ODCM CONTROL 3.0.3 are not applicable.		
SURVEILLAN	ICE REQUIREMENTS		
	Dose Calculations. Cumulative dose contributions sha with 1/2-ODC-2.02 at least once every 31 days.	all be deten	nined in accordance

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	Deerrer W-11 D G t		
	Beaver Valley Power Station Procedure Number: 1/2-ODC-3.03		
Title:		Unit:	Level Of Use:
ODCM C	ontrols for RETS and REMP Programs	1/2	General Skill Reference
		Revision: 2	Page Number: 58 of 75
	ATTACHMENT M Page 1 of 1 ODCM CONTROLS: DOSE - RADIOIODINES AND	PARTICU	
CONTROI	S: DOSE-RADIOIODINES, RADIOACTIVE MATERIA AND RADIONUCLIDES OTHER THAN NOBLE G	AL IN PAR' ASES	FICULATE FORM,
3.11.2.3	In accordance with BV-1 and BV-2 Technical Specific dose to MEMBER(S) OF THE PUBLIC from radioiod particular form (excluding C-14), and radionuclides (o lives greater than eight days in gaseous effluents releas ODC-2.02 Figure 5-1) shall be limited to the following a. During any calendar quarter to $\leq 7.5$ mrem to a b. During any calendar year to $\leq 15$ mrem to any o	lines and rad ther than no ses from the s: ny organ, ar	lioactive materials in ble gases) with half- reactor unit (see 1/2-
Applicabilit		organ.	
Action:			
eigh Com Spec actic	the calculated dose from the release of radioiodines, radio (excluding C-14), and radionuclides (other than noble gat t days, in gaseous effluents exceeding any of the above lim amission within 30 days, pursuant to 10 CFR 20.2203(a)(2 cial Report, which identifies the cause(s) for exceeding the ons taken to reduce the releases and the proposed corrective equent releases will be within the above limits.	uses) with ha hits, prepare )(v) and 10 limit and d	alf-lives greater than and submit to the CFR 50.4(b)(1), a
b. The	b. The provisions of ODCM CONTROL 3.0.3 are not applicable.		
SURVEILL	ANCE REQUIREMENTS		
4.11.2.3.1	Dose Calculations. Cumulative dose contributions shal with 1/2-ODC-2.02 at least once every 31 days.	l be determi	ined in accordance

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E	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.03
Title:		Unit:	Level Of Use: General Skill Reference
ODCM. Contr	rols for RETS and REMP Programs	<u>1/2</u> Revision:	Page Number:
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	Page 1 of 1		
	ODCM CONTROLS: GASEOUS RADWASTE TRI	EATMENT S	YSTEM
CONTROLS:	GASEOUS RADWASTE TREATMENT SYSTEM		
3.11.2.4	In accordance with BV-1 and BV-2 Technical Speci Radwaste Treatment System and the Ventilation Exl to reduce radioactive materials in gaseous waste prio projected gaseous effluent air doses due to gaseous e (see 1/2-ODC-2.02 Figure 5-1), when averaged over gamma radiation and 0.4 mrad for beta radiation. The Ventilation Exhaust Treatment System shall be used gaseous waste prior to their discharge when the proj releases from the reactor unit (see 1/2-ODC-2.02 Figure 0.3 mrem to any organ.	haust Treatme or to their disc effluent release 31 days, wou he appropriate to reduce rac ected doses d	ent System shall be used charge when the ses from the reactor unit ald exceed 0.2 mrad for e portions of the lioactive materials in ue to gaseous effluent
<u>Applicability</u>	: At all times.		
Action:			
prepa	gaseous waste being discharged without treatment and re and submit to the Commission within 30 days, purs R 50.4(b)(1), a Special Report which includes the fol	uant to 10 CH	FR 20.2203(a)(2)(v) and
1.	Identification of the inoperable equipment or subsys	stems and the	reason for inoperability,
2.	Action(s) taken to restore the inoperable equipment	to operationa	l status, and
3.	Summary description of action(s) taken to prevent a	recurrence.	· .
b. The p	provisions of ODCM CONTROL 3.0.3 are not applica	ble.	
SURVEILLA	ANCE REQUIREMENTS		· · · · · · · · · · · · · · · · · · ·
4.11.2.4.1	Doses due to gaseous releases from the site shall be accordance with 1/2-ODC-2.02.	projected at 1	least once per 31 days, in
	accordance with 1/2-ODC-2.02.		

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	<b>Beaver Valley Power Station</b>	Procedure Nu	umber: 1/2-ODC-3.03
Title:		Unit:	Level Of Use:
ODCM. C	entrole for DETC 1 DED (D D	1/2	General Skill Reference
	ontrols for RETS and REMP Programs	Revision:	Page Number: 60 of 75
	ATTACHMENT O		
	Page 1 of 1		
	ODCM CONTROLS: GAS STORAGE	E TANKS	
CONTRO	LS: GAS STORAGE TANKS		
	LS: GAS STORAGE TANKS		
3.11.2.5	In accordance with BV-1 and BV-2 Technical Spec radioactivity contained in the following gas storage gas values listed below (considered as Xe-133).	tification 6.8.6c tanks(s) shall l	, the quantity of be limited to the noble
	a. ≤52,000 Curies: Each BV-1 Waste Gas Deca or GW-TK-1C)	y Tank (GW-T	K-1A, or GW-TK-1B
	<ul> <li>b. ≤19,000 Curies: Any connected group of BV (2GWS-TK25A thru 2GWS-TK25G)</li> </ul>	-2 Gaseous Wa	ste Storage Tanks
APPLICAL	BILITY: At all times.		
ACTION:			
a.	With the quantity of radioactive material in any gas s immediately suspend all additions of radioactive mate reduce the tank contents to within the limit, nad	torage tank exc erial to the tank	eeding the above limit and within 48 hours
b.	Submit a Special Report in accordance with 10 CFR as a schedule and a description of activities planned and within the specified limits.	50.4 (b)(1) with /or taken to red	iin 30 days and includ uce the contents to
c.	The provisions of ODCM Control 3.0.3 are not applied	cable.	
SURVEILI	ANCE REQUIREMENTS		
4.11.2.5.1	For BV-1 Waste Gas Decay Tanks: The quantity of each BV-1 Waste Gas Decay Tank shall be determin least once per 24 hours when radioactive materials a Performance of this surveillance is required when th coolant is greater than 100 uCi/ml.	ned to be within are being added	n the above limit at to the tank.
	For BV 2 General Wests Stars (Fig. 1)		

For BV-2 Gaseous Waste Storage Tanks: The quantity of radioactive material contained in any connected group of BV-2 Gaseous Waste Storage Tanks shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tanks.

	Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-3.03
Title:		Unit:	Level Of Use:
ODCM: Controls for RETS and REMP Programs Revision: Page Number:			General Skill Reference Page Number: 61 of 75
	ATTACHMENT P Page 1 of 1 ODCM CONTROLS: TOTAL DO	)SE	<u> </u>
CONTRO	LS: TOTAL DOSE	· ·	
3.11.4.1	In accordance with BV-1 and BV-2 Technical Speci (calendar year) dose or dose commitment to any ME releases of radioactivity and to radiation from uranit to $\leq 25$ mrems to the whole body or any organ, exce to $\leq 75$ mrems.	EMBER OF TH Im fuel cycle s	HE PUBLIC due to sources shall be limited
Applicabil	ity: At all times.		
Action:			
excee 3.11. units CON Com Spec preve confo inclu from calen radia or co resul inclu of the reque b. The	the calculated doses from the release of radioactive matering twice the limits of ODCM CONTROL 3.11.1.2a, 3 2.3a, or 3.11.2.3b, calculations shall be made including of (including outside storage tanks, etc.) to determine when TROL 3.11.4.1 have been exceeded. If such is the case, mission within 30 days, pursuant to 10 CFR 20.2203(a)( ial Report that defines the corrective action to be taken to ent recurrence of exceeding the above limits and includes ormance with the above limits. This Special Report, as of de an analysis that estimates the radiation exposure (dose uranium fuel cycle sources, including all effluent pathw dar year that includes the release(s) covered by this reportion and concentrations of radioactive material involved, ncentrations. If the estimated dose(s) exceeds the above ting in violation of 40 CFR Part 190 has not already been de a request for a variance in accordance with the provis e report is considered a timely request, and a variance is est is complete.	8.11.1.2b, 3.11 direct radiation ther the above prepare and s 2)(v) and 10 C o reduce subset s the schedule lefined in 10 C e) to a MEMB ays and direct rt. It shall also , and the cause limits, and if n corrected, the ions of 40 CFI granted until s	.2.2a, 3.11.2.2b, a contributions from the limits of ODCM ubmit to the CFR 50.4(b)(1), a quent releases to for achieving CFR 20.405(c), shall ER OF THE PUBLIC radiation, for the o describe levels of of the exposure levels the release condition e Special Report shall R Part 190. Submittal
4.11.4.1.1	Cumulative dose contributions from liquid and gase accordance with ODCM SURVEILLANCE REQUI and 4.11.2.3.1.		
			<i></i>

4.11.4.1.2 Cumulative dose contributions from direct radiation from the units (including outside storage tanks, etc.) shall be determined in accordance with 1/2-ODC-2.04. This requirement is applicable only under conditions set forth in Action a. of ODCM CONTROL 3.11.4.1.

Beaver	Valley	Power	Station
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Title:

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## ODCM: Controls for RETS and REMP Programs

#### ATTACHMENT Q Page 1 of 8 ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

## CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

3.12.1 In accordance with BV-1 and BV-2 Technical Specification 6.8.6b, Item 1, the radiological environmental monitoring program shall be conducted as specified in ODCM Control 3.12.1, Table 3.12-1.

Applicability: At all times.

Action:

- a. With the radiological environmental monitoring program not being conducted as specified in ODCM Control 3.12.1, Table 3.12-1, prepare and submit to the Commission, in the Annual Radiological Environmental Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period.
- b. With the level of radioactivity in an environmental sampling medium at one or more of the locations specified in ODCM Control 3.12.1, Table 3.12.1 exceeding the limits of ODCM Control 3.12.1, Table 3.12-2 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days from the end of affected calendar quarter a Special Report pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1) which includes an evaluation of any release conditions, environmental factors or other aspects which caused the limits of ODCM Control 3.12.1, Table 3.12-2 to be exceeded. This report is not required if the measured level of radioactive was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Report.

When more than one of the radionuclides in ODCM Control 3.12.1, Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

Concentration (1)Concentration (2)Limit Level (1)+Limit Level (2)+ $\dots \ge 1.0$ 

- c. With milk or fresh leafy vegetable samples unavailable from the required number of locations selected in accordance with ODCM CONTROL 3.12.2 and listed in the ODCM, obtain replacement samples. The locations from which samples were unavailable may then be deleted from those required by ODCM Control 3.12.1, Table 3.12-1 and the ODCM provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations, if available.
- d. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1.1 The radiological environmental monitoring samples shall be collected pursuant to ODCM Control 3.12.1, Table 3.12-1 from the locations given in the ODCM and shall be analyzed pursuant to be requirements of ODCM Control 3.12.1, Tables 3.12-1 and 4.12-1.

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DDCM: Controls for RE	TS and REMP Program	ns	Revision: 2	Page Number: 63 of 75			
ATTACHMENT Q Page 2 of 8 ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS <u>TABLE 3.12-1</u> <u>RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM</u>							
EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF SAMPLES AND LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AN OF ANAL	D FREQUENCY ^(*) YSIS			
1. AIRBORNE a. Radioiodine And Particulates	<ul> <li>5 locations</li> <li>1. One sample from a control location 10-20 miles distant and in the least prevalent wind direction</li> </ul>	Continuous operation of sampler with sample collection at least weekly.	Each radioiodine canister. Analyze for I-131; Particulate sampler. Analyze for gross beta weekly ^(b) ; Perform gamma isotopic				
	2. One sample from vicinity of community having the highest calculated annual average ground level D/Q.		analysis or	ample at least			
2. DIRECT RADIATION	40 locations ≥ 2 TLDs or a pres- surized ion chamber at each location.	Continuous measurement with collection at least quarterly.	Gamma do	ose, quarterly.			

(*) Analysis frequency same as sampling frequency unless otherwise specified.

(b) Particulate samples are not counted for ≥ 24 hours after filter change. Perform gamma isotopic analysis on each sample when gross beta is >10 times the yearly mean of control samples.

**Sample locations are given on figures and tables in 1/2-ODC-2.03.

2 locations.

N/A -

1 location.

upstream. 2. One sample

downstream.

Composite* sample

collected over a period

not to exceed 2 weeks.

Title:

EXPOSURE

3. WATERBORNE a. Surface

SAMPLE

b. Drinking

c. Groundwater

d. Sediment From

Shoreline

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OD					
	CITCOTIKULS: RE	MP-PROGRAM REQU	JIREMENTS	5	
	TABLE	3.12-1 (continued)			
		_			
<u>RADI</u>	OLOGICAL ENVIRO	NMENTAL MONITOR		<b>ΔΑλ</b>	
	NUMBER OF	SAMPLING AND			
D/OR			TYPE AND FREQUENCY ⁽⁴⁾ OF ANALYSIS		
		COLLECTION			
	LOCATIONS**	FREQUENCY			
NE		<b> </b>			
	210000				
	2 locations.	Composite* sample	Gamma isotopic analysis of		
	1. One sample collected over a pe			mple by location	
		not to exceed 1 month.			
	upstream.	not to execced 1 monul.	monthly;		

Tritium analysis of

I-131 analysis of each

composite sample;

sample quarterly.

semi-annually.

quarterly.

composite sample at least

Gamma isotopic analysis of composite sample (by location) monthly;

Tritium analysis of composite

Gamma isotopic analysis

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PATHWAY AND/OR | SAMPLES AND

# (a) Analysis frequency same as sampling frequency unless otherwise specified.

plant and river

*Composite samples shall be collected by collecting an aliquot at intervals not exceeding two hours. For the upstream surface water location, a weekly grab sample, composited each month based on river flow at time of sampling, is also acceptable.

No wells in lower elevations between

Semi-annually.

**Sample locations are given on figures and tables in 1/2-ODC-2.03.

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# ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

# TABLE 3.12-1 (continued)

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

NUMBER OF	SAMPLING AND	TYPE AND FREQUENCY ^(a)
SAMPLES AND	COLLECTION	OF ANALYSIS
LOCATIONS**	FREQUENCY	
4 locations. ^(b)	Atleast bi-weekly when	Gamma isotopic and I-131
1. Three samples selected on basis of highest potential thyroid dose using milch census data.	animals are on pasture; at least monthly at other times.	analysis of each sample.
2. One local large dairy.		
2 locations.	Semi-annual. One sample of available species.	Gamma isotopic analysis on edible portions.
<ol> <li>4 locations.</li> <li>1. Three locations</li> </ol>	Annually at time of harvest.	Gamma isotopic analysis and I-131 analysis on edible portion.
within 5 miles. 2. One control location.		
	<ul> <li>SAMPLES AND LOCATIONS**</li> <li>4 locations.^(b)</li> <li>1. Three samples selected on basis of highest potential thyroid dose using milch census data.</li> <li>2. One local large dairy.</li> <li>2 locations.</li> <li>4 locations.</li> <li>1. Three locations within 5 miles.</li> <li>2. One control</li> </ul>	<ul> <li>SAMPLES AND LOCATIONS**</li> <li>4 locations.^(b)</li> <li>Atleast bi-weekly when animals are on pasture;</li> <li>Three samples selected on basis of highest potential thyroid dose using milch census data.</li> <li>One local large dairy.</li> <li>2 locations.</li> <li>4 locations.</li> <li>Semi-annual. One sample of available species.</li> <li>4 locations.</li> <li>Atleast bi-weekly when animals are on pasture; at least monthly at other times.</li> <li>Semi-annual. One sample of available species.</li> <li>Annually at time of harvest.</li> <li>One control</li> </ul>

(a) Analysis frequency same as sampling frequency unless otherwise specified.

^(b)Other dairies may be included as control station or for historical continuity. These would not be modified on basis of milch animal census.

**Sample locations are given on figures and tables in 1/2-ODC-2.03.

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# ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

### TABLE 3.12-2

#### **REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS**

### **IN ENVIRONMENTAL SAMPLES**

		REPORTING LEVELS			
		AIRBORNE		BROAD LEAF	
	WATER	PARTICULATE OR	FISH	MILK	VEGETABLES
ANALYSIS	(pCi/l)	GASES (pCi/m ³ )	(pCi/kg, WET)	(pCi/l	(pCi/kg, WET)
H-3	2E+4 ^(a)				
Mn-54	1E+3		3E+4		
Fe-59	4E+2		1E+4		
Co-58	1E+3		3E+4		
Co-60	3E+2		1E+4		
Zn-65	3E+2		2E+4		
Zr/Nb-95	4E+2				
I-131	2 ^(b)	0.9		3	1E+2
Cs-134	30	10	1E+3	60	1E+3
Cs-137	50	20	2E+3	70	2E+3
Ba/La-140	2E+2			3E+2	

^(a) For drinking water samples. This is a 40 CFR Part 141 value. If no drinking water pathway exists, a value of 3E+4 pCi/l may be used.

^(b) If no drinking water pathway exists, a value of 20 pCi/l may be used.

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## TABLE 4.12-1

# MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)^{(a)(e)}

ANALYSIS	WATER (pCi/l)	AIRBORNE PARTICULATE OR GAS (pCi/m ³ )	FISH (pCi/kg, WET)	MILK (pCi/l)	FOOD PRODUCTS (pCi/kg, WET)	SEDIMENT (pCi/kg, DRY)
Gross Beta	4	1E-2				
H-3	2000 ^(a)					
Mn-54	15		130			
Fe-59	30		260			
Co-58,60	15		130			
Zn-65	30	· · · ·	260	:		
Zr-95	30 ^(c)					
Nb-95	15 ^(c)					
I-131	1 ^(b)	7E-2		1	60	
Cs-134	15	5E-2	130	15	60	150
Cs-137	18	6E-2	150	18	80	180
Ba-140	60 ^(c)			60		
La-140	15 ^(c)		•	15		

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#### TABLE 4.12-1 (continued)

#### **TABLE NOTATION**

^(a) The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

LLD = 
$$\frac{4.66 \text{ Sb}}{(E)(V)(2.22)(Y) \exp(-\lambda\Delta T)}$$

where:

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume);

 $S_b$  is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute);

E is the counting efficiency (as counts per transformation);

V is the sample size (in units of mass or volume);

2.22 is the number of transformations per minute per picocurie;

Y is the fractional radiochemical yield (when applicable);

 $\lambda$  is the radioactive decay constant for the particular radionuclide;

 $\Delta T$  is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of  $S_b$  used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and  $\Delta T$  should be used in the calculations.

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#### TABLE 4.12-1 (continued)

#### **TABLE NOTATION**

The LLD is defined as an <u>a priori</u> (before the fact) limit representing the capability of a measurement system and not as <u>a posteriori</u> (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLD's will be achieved under routine conditions. Occasionally, background fluctuations, unavoidable small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLD's unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Report.

^(b) If no drinking water pathway exists, a value of 15 pCi/l may be used.

(c) If parent and daughter are totaled, the most restrictive LLD should be applied.

^(d) If no drinking water pathway exists, a value of 3000 pCi/l may be used.

^(e) This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall be identified in the Annual Radiological Environmental Report.

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ĩitle:		Unit: 1/2	Level Of Use: General Skill Reference
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	Page 1 of 1 ODCM CONTROLS: REMP - LAND U	SE CENSUS	
CONTRO	OLS: RADIOLOGICAL ENVIRONMENTAL MONITO	RING - LAND	USE CENSUS
3.12.2	In accordance with BV-1 and BV-2 Technical Spe census shall be conducted and shall identify the loc nearest residence, and the nearest garden of greater leaf vegetation in each of the 16 meteorological se For elevated releases as defined in Regulatory Gui use census shall also identify the locations of all m than 500 square feet producing fresh leafy vegetab sectors within a distance of three miles.	cation of the ne r than 500 squa ctors within a d de 1.111, (Rev. nilk animals and	arest milk animal, the re feet producing broad listance of five miles. 1), July, 1977, the land I all gardens of greater
Applicab	<u>pility</u> : At all times.		
Action:			
cor RE CF	th a land use census identifying a location(s) which yield mmitment greater than the values currently being calculat QUIREMENT 4.11.2.3.1, prepare and submit to the Cor R 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Re- tation(s).	ted in ODCM S mmission within	URVEILLANCE n 30 days, pursuant to 10
cor are the Spo rad pro cal	th a land use census identifying a milk animal location(s mmitment (via the same exposure pathway) 20% greater currently being obtained in accordance with ODCM CO commission within 30 days, pursuant to 10 CFR 20.220 ecial Report, which identifies the new location. The new liological environmental monitoring program within 30 do ogram shall include samples from the three active milk and culated dose or dose commitment. Any replaced location ogram after October 31 of the year in which this land use	than at a location NTROL 3.12.1 03(a)(2)(v) and v location shall days, if possible nimal locations, n may be delete	on from which samples prepare and submit to 10 CFR 50.4(b)(1), a be added to the c. The milk sampling having the highest ed from this monitoring
c. Th	e provisions of ODCM CONTROL 3.0.3 are not applica	ble.	
SURVE	ILLANCE REQUIREMENTS		
pro c. Th	ogram after October 31 of the year in which this land use e provisions of ODCM CONTROL 3.0.3 are not applica	census was cor ble. nce per 12 mont h will provide t	hs between the dates the best results, such a

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* Confirmation by telephone is equivalent to door-to-door.

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## ODCM CONTROLS: REMP - INTERLABORATORY COMPARISON PROGRAM

#### CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING - INTERLABORATORY COMPARISON PROGRAM

3.12.3 In accordance with BV-1 and BV-2 Technical Specification 6.8.6b, Item 3, analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program.

Applicability:

At all times.

Action:

Title:

- a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Report.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.12.3.1 The results of analyses performed as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Report.

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#### CONTROLS: ANNUAL REMP REPORT

#### ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT⁽³⁾

6.9.2 The Annual Radiological Environmental Operating Report covering the operation of the (old TS 6.9.1.10) unit during the previous calendar year shall be submitted before May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM) and in 10 CFR Part 50 Appendix I Sections IV.B.2, IV.B.3, and IV.C.

The annual radiological environmental reports shall include:

- Summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with pre-operational studies, operational controls (as appropriate), and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment.
- The results of the land use censuses required by ODCM CONTROL 3.12.2.
- If harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to alleviate the problem.
- Summarized and tabulated results in the format of ODCM Control 6.9.1.10, Table 6.9-1 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.
- A summary description of the radiological environmental monitoring program.
- A map of all sampling locations keyed to a table giving distances and directions from one reactor.
- The results of licensee participation in the Interlaboratory Comparison Program required by ODCM CONTROL 3.12.3.
- (3) A single submittal may be made for a multiple unit site. The submittal should combine those sections that are common to all units at the station.

				<u>E E:6.9-1</u>					Controls for RETS
	<u>ENVIR</u> Name Of F		ADIOLOGICAL	MONITORING PRO	GRAM SUN				r REJ
		f Bacility	County, State)		ting Period			ODCM C	
MEDIUM OF PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPE AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMITS OF DETECTION ⁴ (LLD)	ALL INDICATOR LOCATIONS MEAN(F) ⁶ RANGE ⁶	LOCATIONS WITH ANNUAL M NAME DISTANCE AND DIRECTION		CONTROL LOCATIONS MEAN(F)® RANGE®	NONROUTINE REPORTED MEASUREMENTS	ATT/ P ONTROLS	and REMP Programs
	. '							ATTACHMENT T Page 2 of 2 ODCM CONTROLS: ANNUAL REMP REPORT	
Nominal Lower limit	a of Detection (LLD)	as defined in Table	Notation ^a of Table	4.12-1 of ODCM CONTR	OL 3.11.1.1			ORT	Unit: 1/2 Revision: 2
<ul> <li>Mean and range base</li> </ul>	d upon detectable mer	surement only. Pr	action of detectable	measurement at specified	locations is indi	icated in parenthesis (f).			Level Of Use: General Skill Reference Page Number: 73 of 75

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CONTROLS: ANNUAL RETS REPORT

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT⁽⁴⁾

6.9.3 (old TS 6.9.1.11)

The Annual Radioactive Effluent Release Report (ARERR) covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program (PCP) and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I Section IV.B.1.

This report is prepared and submitted in accordance with 1/2-ENV-01.05, and at a minimum, shall contain the following:

- A summary of the quantities of radioactive liquid and gaseous effluent and solid waste released from the unit as outlined in Regulatory Guide 1.21, Revision 1, June, 1974, "Measuring, Evaluating, And Reporting Radioactivity In Solid Wastes And Releases Of Radioactive Materials In Liquid And Gaseous Effluents From Light-Water-Cooled Nuclear Power Plants," with data summarized on a quarterly basis following the format of Appendix B thereof.
- An assessment of radiation doses from the radioactive liquid and gaseous effluents released from the unit during each calendar quarter as outlined in Regulatory Guide 1.21. In addition, the unrestricted area boundary maximum noble gas gamma air and beta air doses shall be evaluated. The assessment of radiation doses shall be performed in accordance with this manual.
- Any licensee initiated changes to the ODCM made during the 12 month period.
- Any radioactive liquid or gaseous effluent monitoring instrumentation channels not returned to OPERABLE status within 30 days, and why the inoperability was not corrected in a timely manner. This applies to the liquid or gaseous effluent monitoring instrumentation channels required to be OPERABLE per ODCM CONTROLS 3.3.3.9 and 3.3.3.10.
- Any ODCM SURVEILLANCE REQUIREMENT deficiencies. This applies to monitoring, sampling and analysis and dose projection.
- The reasons when unusual circumstances result in LLD's higher than required by ODCM CONTROL 3.11.1.1, Table 4.11-1 and ODCM CONTROL 3.11.2.1, Table 4.11-2.

(4) A single submittal may be made for a multiple unit site. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

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le:			Unit: Level Of Use:			
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	ODCM CONTROLS: ANNUAL RETS	S REPORTS				
ONTROL	S: ANNUAL RETS REPORT (continued)					
	• The following information for each type of sol report period:	id waste shipped	d offsite during the			
	- container volume					
	- total curie quantity (determined by measurem	ant on anti				
	- principal radionuclides (determined by measurem	icill or estimate)	note)			
	- type of waste (e.g., spent resin, compacted dr	V Waste evanor	ator			
	bottoms)	J	mv1			
	- type of container (e.g., LSA, Type A, Type B	, Large Quantity	/)			
	- solidification agent (e.g., cement)					
	- classification and other requirements specifie	d by 10 CFR Pa	rt 61			
	• An annual summers of hoursesses 1.					
	• An annual summary of hourly meteorological of This annual summary may be either in the form	uata collected of	ver the previous year.			
	This annual summary may be either in the form speed, wind direction, atmospheric stability, ar	n or an nour-by-	figure as the second			
	magnetic tape, or in the form of joint frequency	v distributions of	f wind speed wind			
	direction, and atmospheric stability.	,	opood, wind			
	• An assessment of the radiation does a due to the					
	<ul> <li>An assessment of the radiation doses due to the effluents released from the unit or station durin</li> </ul>	e radioactive liqu	uid and gaseous			
	erroring released from the unit of station dump	ig the previous c	alendar year.			
	• An assessment of the radiation doses from radi	oactive effluents	s to MEMBER(S) OF			
	THE PUBLIC due to their activities inside the	site boundary se	e 1/2-ODC-2.01			
	Figure 5.1 and 1/2-ODC-2.02 Figure 5-1 during	g the report period	od. All assumptions			
	used in making these assessments (e.g., specific	c activity, expos	ure time, and location			
	shall be included in these reports. The assessm	ent of radiation	doses shall be			
	performed in accordance with 1/2-ODC-2.04.					
	• An assessment of radiation doses to the likely r	nost exposed rea	al individual from			
	reactor releases for the previous calendar year t	o show conform	ance with 40 CFR			
	190, Environmental Radiation Protection Stand	lards For Nuclea	r Power Operation.			
	Acceptable methods for calculating the dose co	ntribution from	liquid and gaseous			
	effluents are given in Regulatory Guide 1.109,	Revision 1. The	SKYSHINE Code			
	(available from Radiation Shielding Informatio	n Center, (ORN	L)) is acceptable for			
	calculating the dose contribution from direct ra	diation due to N	-16.			
	• If quantities of radioactive materials released du	uring the reporti	ng period are			
	significantly above design objectives, the report	t must cover this	s specifically			
		r must cover tul	s specifically.			