Beaver Valley Power Station - Units 1 & 2

`, ·

Annual Radioactive Effluent Release Report

Calendar Year - 2003 Attachment 2 Unit 1 and 2 Offsite Dose Calculation Manual Changes

Attachment 2

Attached is a complete copy of the ODCM that includes:

Change (20) of the ODCM (Effective October, 2003)

Attachment 2 Clarification

A complete copy of the ODCM has been provided to the following offices:

United States Nuclear Regulatory Commission Attention: Document Control Desk Washington, DC 20555-0001

United States Nuclear Regulatory Commission Regional Administrator 475 Allendale Road King of Prussia, PA 19406

For a complete copy of the ODCM, contact Mr. Anthony T Lonnett at 724-682-7523.

Form 1/2-ENV-01.05.F01 (page 21 of 21), Rev 0 Beaver Valley Power Station - Units 1 & 2

Annual Radioactive Effluent Release Report

Calendar Year - 2003 Table 9 Page 21 of 21

RTL # A9.690E

Unit 1 and 2 Offsite Dose Calculation Manual Changes (Description)

There was one change made to ODCM during the report period. See ODCM procedure No. 1/2-ODC-1.01 for a complete description of the change, and the change justification. A brief description of the changes are as follows:

Change (20) to the ODCM (Effective October, 2003)

- 1) **Procedure 1/2-ODC-1.01:** Updated the History of ODCM Changes to include this change.
- 2) **Procedure 1/2-ODC-2.01:** Updated Liquid Waste System diagrams to indicate the flow path for cross-connect of liquid waste between Unit 1 and Unit 2, and to denote use of a charcoal Pre-Conditioning Filter to the Liquid Radwaste Treatment System.
- 3) **Procedure 1/2-ODC-2.02:** Updated the source-term for Unit 1 containment vacuum pumps.
- 4) Procedure 1/2-ODC-3.03: Updated the Preplanned Method of Monitoring when the mid range and high range noble gas effluent monitors are inoperable. Updated the activity limits for liquid storage tanks. Added clarifications to gaseous effluent pathway sampling tables.

RTL #A9.621B

Beaver Valley Power Station

Unit 1/2

1/2-ODC-1.01

ODCM: Index, Matrix and History of ODCM Changes

Document Owner

Manager, Radiation Protection

•	·
Revision Number	3
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

. . . .

i .	Beave	er Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
litle:	<u></u>		Unit:	Level Of Use:
			1/2	General Skill Reference
ODCM:	: Index, Matri	x and History of ODCM Changes	Revision:	Page Number: 2 of 70
			•	2 01 70
		TABLE OF CONTENTS		
1.0 P	URPOSE		••••••	4
2.0 S	COPE			4
3.0 R		S AND COMMITMENTS		
-		es Used in This Procedure		
-		y of References Used Throughout Other Proc		
		ments		
		ID FORMS		
-	_			
-		IS AND LIMITATIONS		
		E CRITERIA		
		TES		
8.0 P	ROCEDURE		•••••••••••••••••••••••	
		ion of ODCM Structure		
-	8.1.1	1/2-ODC-1.01, ODCM: Index, Matrix and		
	8.1.2	1/2-ODC-2.01, ODCM: Liquid Effluents.		
	8.1.3	1/2-ODC-2.02, ODCM: Gaseous Effluent		
	8.1.4	1/2-ODC-2.03, ODCM: Radiological Env	vironmental Mo	nitoring Program14
	8.1.5	1/2-ODC-2.04, ODCM: Information Rela		
•	8.1.6	1/2-ODC-3.01, ODCM: Dispersion Calcu Inputs		
	8.1.7	1/2-ODC-3.02, ODCM: Bases for ODCM		
	8.1.8	1/2-ODC-3.03, ODCM: Controls for REI		
8	B.2 History	Of ODCM Changes		
	8.2.1	Change (1) of BV-1 ODCM (Issue 1, Effe		
	8:2.2	Change (2) of BV-1 ODCM (Issue 1, Revi		
	· 8.2.3	Change (3) of BV-1 ODCM (Issue 1, Revi	•	
	8.2.4	Change (4) of BV-1 ODCM (Issue 2, Effe		
		(Issue 1, Revision 1, Effective July, 1987)		
	8.2.5	Change (5) of BV-1 ODCM (Issue 2, Revi		
	to and	and BV-2 ODCM (Issue 1, Revision 2, Ef		
	8.2.6	Change (6) of BV-1 ODCM (Issue 2, Revi		
	007	2 ODCM (Issue 1, Revision 3, Effective J		
	8.2.7	Change (7) of BV-1 and 2 ODCM (Issue 2) Change (8) of BV 1 and 2 ODCM (Issue 2)		
	8.2.8	Change (8) of BV-1 and 2 ODCM (Issue 2) Change (9) of BV 1 and 2 ODCM (Issue 2)		
	8.2.9 8.2.10	Change (9) of BV-1 and 2 ODCM (Issue 3 Change (10) of BV-1 and 2 ODCM (Issue		-
	8.2.10 8.2.11	Change (10) of BV-1 and 2 ODCM (Issue Change (11) of BV-1 and 2 ODCM (Issue		
	8.2.11 8.2.12	Change (12) of BV-1 and 2 ODCM (Issue		
	0.2.12		-	
	8 2 13	Change (13) of RV-1 and 2 ODCM (Issue	3. Revision 6	
		• · · ·		-
			-	
	8.2.13 8.2.14 8.2.15	Change (12) of BV-1 and 2 ODCM (Issue 1998) Change (13) of BV-1 and 2 ODCM (Issue Change (14) of BV-1 and 2 ODCM (Revi Change (15) of BV-1 and 2 ODCM (Revi	3, Revision 6, sion 14, Effecti	

1_

Beaver Valley Pov	ver Station		Procedure Nu	1/2-0DC-1.01	
Title:		1	Unit: 1/2	Level Of Use: General Skill R	efe
ODCM: Index, Matrix and History of Ol	DCM Changes	· · · · ·	Revision:	Page Number:	•
	~	<u> </u>	L <u>_3</u>	<u>3 of 7</u> (<u>v</u>
т	ABLE OF CONTEN	ТS		•	
				:	
	V-1 and 2 ODCM (E)				
ATTACHMENT A LIST OF ODCM	V-1 and 2 OCDM (E TABLES			— , •••••••••••••••••••••••••••••••••••	•••••
ATTACHMENT B LIST OF ODCM	FIGURES			••••••	
ATTACHMENT C ODCM CONTRO	DLS PROCEDURE N	IATRIX.	•••••	•••••	
	All and a share and	· . • ·	•. • •		
· _				· .	
en e	·	,	••	• • •	
			•	•	·
				••••	
tang dinta tang tang tang tang tang tang tang t		: ' '			
ne dina katalah sing katalah sing katalan sing katalan sing katalan sing katalan sing katalan sing katalan sing Katalan sing katalan	•	,• I	•	· ·	
			· · · · ^		
1.9 the second second second			'.		
			·		
			. *	,	
•					:
				. ,	
	с. фор		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		
·	··· * .		-		
· · · ·		<u>`</u> .	••	\cdot	
· ·					
				•• • •	
a ser a ser a ser a ser a	A # 1	:	· , · •	· ·	:
			х н ^с		
. [−] πt ur		· · * .		· · · · ·	
			•		
te angeles an et les des barres de la serie. Les constants de la serie d	n an the second states of the	· .	· ·	• •	
		· · · · ·	. • •	- - 	
	· · · · ·	en de la composition de la composition a composition de la co			-
				-	
· ·					
·					

		•		
	Beaver Valley Power Station	Procedure Number:		
Title:		Unit:	1/2-ODC-1.01 Level Of Use:	
		1/2	General Skill Reference	
ODCM	: Index, Matrix and History of ODCM Changes	Revision:	Page Number:	
		3	4 of 70	
1.0	PURPOSE			
1.1	This procedure provides an index for the entire Offsite Dose	Calculation	Manual (ODCM).	
1.2	This procedure also provides an historical description of all c	hanges to th	e ODCM.	
1.3	This procedure also contains a matrix of plant procedure refe Technical Specifications (RETS), Radiological Environments surveillances that were transferred from the Technical Specific ODCM via Change (8) and Change (16).	al Monitorin	g Program (REMP)	
1.3	.1 Prior to issuance of this procedure, these items were loca of the old ODCM.	ited in the In	dex and Appendix F	
1.3	2 The numbering of each specific ODCM Controls, ODCM and ODCM Controls Tables contained in this procedure This is intentional, as all ODCM Controls, ODCM Surve ODCM Controls Tables numbers remained the same whe the Technical Specifications Procedure Matrix. This wa the amount of plant procedure changes and to eliminate a numbering changes.	does not app eillance Req en they were s done in an	pear to be sequential. uirements and transferred from effort to minimize	
2.0	<u>SCOPE</u>	3		
2.1	This procedure is applicable to all station personnel that are of described and referenced in this procedure.	qualified to p	perform activities as	
3.0	REFERENCES AND COMMITMENTS			
3.1	References Used in This Procedure			
3.1	.1 NUREG-0472, Draft 7 for Rev. 3, Standard Radiologica Specifications For PWRs September, 1982.	l Effluent To	echnical	
3.1	.2- NUREG-0133, Preparation Of Radiological Effluent Tec Nuclear Power Plants, October, 1978.	chnical Spec	ifications For	
3.1	.3 Generic Letter 89-01, Implementation Of Programmatic Effluent Technical Specifications In The Administrative Technical Specifications And The Relocation Of Proceed ODCM Or To The PCP, January 31, 1989.	Controls Se	ection Of The	
3.1	 3.1.4 NUREG-1301, Offsite Dose Calculation Manual Guidance: Stan Effluent Controls For Pressurized Water Reactors, Generic Letter No. 1, April, 1991. 		— .	

3.1.5 1/2-ODC-3.03, ODCM: Controls for RETS and REMP Programs

Beaver Valley Power Station	Procedure Number: 1/2-ODC-1.01		
DDCM: Index, Matrix and History of ODCM Changes	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Reference Page Number:	
3.1.6 1/2-ADM-1640, Control of the Offsite Dose Calculation M	anual	<u> </u>	
3.1.7 1/2-ADM-0100, Procedure Writer's Guide	· .	•	
3.1.8 NOP-SS-3001, Procedure Review and Approval			
 3.2 <u>Summary of References Used Throughout Other Procedures of 1</u> 3.2.1 <u>BVPS-1 and 2 UFSAR</u>: 	the ODCN	<u>M</u>	
3.2.1.1 _ BVPS-1 UFSAR Section 11.2.3; Gaseous Waste Disp	posal Syst	tèm	
3.2.1.2 BVPS-1 UFSAR Section 11.2.4; Liquid Waste Dispo	osal Syster	m	
3.2.1.3 BVPS-2 UFSAR Section 11.2; Liquid Waste Manage	ement Sys	stems	
3.2.1.4 BVPS-2 UFSAR Section 11.3; Gaseous Waste Mana	gement S	ystems	
3.2.2 <u>Condition Reports</u> :	· ·		
3.2.2.1 CR 971578, MEMBERS OF THE PUBLIC Discrepa 4 of the ODCM to clarify how doses due to effluents (conducting activities inside the site boundary) are de	for memb	pers of the public	
3.2.2.2 CR 980129, ODCM Procedure Matrix Discrepancies of the ODCM to correct discrepancies with 1/2-OM I	-		
3.2.2.3 CR 980353, EPMP 2.01 Discrepancies for Environm CA-01, Revise Section 3 of the ODCM to correct RE sectors.	EMP samp		
3.2.2.4 CR 981488, Chemistry Related ODCM Procedures a References. CA-01, Revise ODCM Appendix F to a references.	and ODCN		
3.2.2.5 CR 981489, ODCM Table 4.11-2 Row A (Waste Ga Tritium). CA-01, Revise Appendix C of the ODCM clarification as to where and when tritium samples an discharges.	(Table 4.	11-2) to add	
3.2.2.6 CR 981490, ODCM Table 4.11-2 Note e, and Relate Procedures. CA-01, Revise Appendix C of the ODC specify the proper tritium sample point.			
3.2.2.7 CR 982097, Liquid Discharge Post Release Review Section 1 of the ODCM to add clarification for calcu concentration when the Post Dose Correction Factor	lation of a	radionuclide	

B	eaver Valley Power Station	Procedure N	
Title		Unit:	1/2-ODC-1.01 Level Of Use:
		1/2	General Skill Reference
ODCM: Index,	Matrix and History of ODCM Changes	Revision:	Page Number: 6 of 70
3.2.2.8	CR 990025, Unnecessary Radiation Monitor Set Discharges. No ODCM changes are required fo		
3.2.2.9	CR 992652, Discrepancies Concerning ODCM S Effluent Instrumentation. CA-02, Revise Apper proper reference to the HP Shift logs.		
3.2.2.10	CR 993021, Apparent Failure to Test RM-DA-1 ODCM. No ODCM changes are required for th	-	on as Required by
3.2.2.11	 CR 001682, ODCM Action 28 Guidance. CA-0 ODCM (Table 3.3-13, Action 28) to differentiat Inoperable Process Flow Rate Monitors vs. Sam 	e actions assoc	iated with
3.2.2.12	CR02-05533, Procedure 1/2-ODC-3.03, ATTAC CA-01, Revise ODCM procedure 1/2-ODC-3.03 minimum channels operable and associated action Device [FR-1LW-103] is inoperable.	3 (Table 3.3-12	e) to include
3.2.2.13	CR02-05711, TS and ODCM changes not reflected in 1OM-54.3.L5 Surveillance Log. CA-01, Revise 1/2-ODC-3.03 to add a requirement for applicable station groups notification of pending ODCM changes.		
3.2.2.14	CR02-06174, Tracking of Activities for Unit 11 Implementation. CA-13, Revise ODCM proced discussion as to why Zn-65 is being added to the procedure 1/2-ODC-2.01 (Tables 1.1-1a and 1b) to ODCM liquid source term.	ure 1/2-ODC- ODCM. CA	1.01 to include a -14, Revise ODCM
3.2.2.15	CR 03-02466, RFA-Radiation Protection Efflue Recommendation on Processing when Performi 7A/7B]. CA-02, Revise ODCM Procedure 1/2- show the liquid waste flow path cross-connect b	ng Weekly Sar ODC-2.01, (A	nple of [1LW-TK- ttachment D) to
3.2.2.16	CR03-04830, Containment Vacuum Pump Repl Term. CA-03, Revise Unit 1 Containment Vacu procedure 1/2-ODC-2.02, Attachment A, Table	uum Pump Sou	-
3.2.2.17	CR03-06123, Enhance Table 3.3-6 of 1/2-ODC Method of Monitoring. CA-01, Revise Table 3 Eberline SPING Channel 5 as an additional 2 nd Range Noble Gas Effluent Monitors are Inopera	.3-6 and Table PMM when th	4.3-3 to allow use of
3.2.2.18	CR03-06281, Gaseous Tritium Sampling Requi Unclear for Chemistry. CA-01, Revise procedu RP & Chemistry sampling of Gaseous Effluent pathways need sampled for compliance to ODC	re Attachment Pathways to sl	K Table 4.11-2 for now which effluent

Beaver Valley Power Station			nber: /2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill Referen
ODCM: Index, N	Aatrix and History of ODCM Changes	Revision:	Page Number: 7 of 70
3.2.2.19	CR03-07487, Results of NQA Assessment of the Ra CA-01, Revise Calculation Package No. ERS-ATL-	95-007 to cl	arify the term
	"Surface Water Supply" per guidance presented in N 05, Revise 1/2-ODC3.03 Control 3.11.1.4 to update outside storage tanks.		
3.2.2.20	CR03-07668, Benchmark Effluent & Environmenta Presented at 13 th REMP/RETS Workshop. CA-01, Attachment K Table 4.11-2 to reduce the amount of	Evaluate pro	ocedure
	_ during a power transient.	•	· ·
3.2.2.21	CR03-09959, RFA-Rad Protection Provide Clarifica Tritium Sample. CA-01, Revise ODCM procedure (Table 4.11-2 note c & note e) to allow sampling of atmosphere.	1/2-ODC-3.	03 Attachment K
	atmosphere.	••••••	
3.2.3 <u>Calc</u>	culation Packages:		··
3.2.3.1	ERS-ATL-83-027; Liquid Waste Dose Factor Calcu and Later	ilation for H	IPM-RP 6.5, Issue 3
3.2.3.2	ERS-SFL-85-031; Gaseous Effluent Monitor Efficient	ency Data	÷.
3.2.3.3	ERS-ATL-86-008; ODCM Alarm Setpoint Revision	ns for Gaseo	ous Monitors
3.2.3.4	ERS-HHM-87-014; Unit 1/2 ODCM Gaseous Efflu Determinations	ent Monitor	Alarm Setpoint
3.2.3.5	ERS-ATL-87-026; BVPS-1 and BVPS-2 ODCM T	Factor Justi	fication
3.2.3.6	ERS-ATL-89-014; Verification/Validation of ODC	M R Values	•
3.2.3.7	ERS-ATL-90-021; Justification for Removal of Tec Flowrate Measurement Requirements for 2RMQ-Re 2HVL-RQ112		
3.2.3.8	ERS-ATL-95-006; Re-evaluation of TS/ODCM SR Notes e and g of TS/ODCM Table 4.11-1	's 4.11.1.1.3	8, 4.11.1.1.4 and
3.2.3.9	ERS-ATL-95-007; Verification of Outside Storage 3.11.1.4	Tank Activ	ity Limit of TS
3.2.3.10	Stone and Webster UR(B)-160; BVPS Liquid Rady Concentrations - Expected and Design Cases (Per U		
3.2.4 <u>Inte</u>	ernal Letters:		- · .

-

Ĵ,

()

;;;

:

Be	aver Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01	
Title:		Unit: 1/2	Level Of Use: General Skill Refer	
DDCM: Index, N	Matrix and History of ODCM Changes	Revisiou:	Page Number: 8 of 70	
3.2.4.1	DLC Response to NRC Unresolved Item 50-33 Study- Particle Distribution Evaluation, Novem	•		
3.2.4.2	ND1SHP:776, BVPS-1 ODCM Table 2.2-2, AI	opendix B, Febr	uary 12, 1988	
3.2.4.3	ND3NSM:3431; Technical Specification Verifi	cation Effort, A	ugust 11, 1988	
3.2.4.4	NDLNSM:3522; Technical Specification Verifi 14, 1988	ication Effort C	hecklist, September	
3.2.4.5	- ND1NSM:3652; Technical Specification Verifi	cation Effort, N	lovember 21, 1988	
3.2.4.6	NPD3SHP:2466; Self Assessment of the Liquid BVPS - Final Report, July 16, 1997	l and Gaseous E	Effluent Processes a	
3.2.4.7	NPD3SHP:2257; ODCM Liquid Waste Recircu	ulation Rates, Fe	ebruary 11, 1998	
3.2.4.8	NPD3SHP:2643; Action 28 of ODCM Append	NPD3SHP:2643; Action 28 of ODCM Appendix C Table 3.3-13, January 14, 1999		
3.2.4.9	ND3MNO:4309; Response to Request for Tech April 20, 1999.	nical Specificat	tion Interpretation,	
3.2.5 <u>Con</u>	tractor Technical Evaluation Reports:			
3.2.5.1	EGG-PHY-8194; Technical Evaluation Report Updated through Issue 2, Revision 1, Beaver V September 1988			
3.2.5.2 •	EGG-PHY-8217; Technical Evaluation Report updated through Issue 1, Revision 2, Beaver Va September 1988			
3.2.5.3	NUS-2173; Development of Terrain Adjustmen Valley Power Station for the Straight-Line Atm 1978	•••		
3.2.5.4	1978 UCRL-50564; Concentration Factors of Chemical Elements in Edible Aquatic Organisms, Revision 1, 1972			
3.2.6 <u>NR</u>	C Letters:			
3.2.6.1	Unit 1 Technical Specification Amendment 66	, March 28, 198	3	
3.2.6.2	Beaver Valley Unit 2 - Offsite Dose Calculatio July 14, 1987	n Manual, ODC	CM (TAC 63996),	
3.2.6.3	Beaver Valley Units 1 and 2 - Acceptance of th (TAC 93996 and 67421), March 2, 1989	ne Offsite Dose	- Calculation Manua	

L**I**_

Be	eaver Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Index, I	Matrix and History of ODCM Changes	Revision:	Page Number: 9 of 70
3.2.6.4	Unit 1/2 Technical Specification 6.8.6, including (LAR 1A-175/2A-37), Implemented August 7, 19		1A-188/2A-70
3.2.6.5	Unit 1/2 Technical Specification 6.8.6, including (LAR's 1A-231/2A-101), Implemented December		1A-194/2A-77
3.2.6.6	Unit 1/2 Technical Specification Figure 5.1-2, in 83 (LAR 1A-234/2A-107, Implemented June 9, 1		dments 1A-202/2A-
3.2.6.7	Unit 1/2 Technical Specifications 6.9.1.10 and 6. ⁻ 220/2A-97 (LAR 1A-246/2A-116), Implemented		
3.2.6.8	Unit 1/2 Technical Specification 3.3.3.1, includin (LAR 1A-287/2A-159), Implemented April 11, 2	-	nts 1A-246/2A-124
3.2.6.9	Unit 1/2 Technical Specifications 3.11.1.4, 3.11.2 Amendments 1A-250/2A-130 (LAR 1A-291/2A- 2002		
3.2.7 NU	REG's:	.e. 1997. 1997	
3.2.7.1	NUREG-0017, Calculation of Releases of Radio Liquid Effluents from Pressurized Water Reactor April 1985	rs, (PWR- Gal	
3.2.7.2	NUREG 0133; Preparation of Radiological Efflu Nuclear Power Plants, October 1978		Specification for
3.2.7.3 *	NUREG-0172; Age-Specific Radiation Dose Co Chronic Intake, November 1977	mmitment Fa	ctors for a One-Year
3.2.7.4	NUREG-0324, XOQDOQ, Program for the Meter Releases at Nuclear Power Stations, September 1		valuation of Routine
3.2.7.5	NUREG-0472; Radiological Effluent Technical	Specifications	s for PWR's.
3.2.7.6	NUREG-0800, Standard Review Plan, Postulate Liquid-Containing Tank Failures, July 1981	d Radioactive	Releases Due to
3.2.7.7	NUREG-1301; Offsite Dose Calculation Manual Effluent Controls for Pressurized Water Reactor Supplement No. 1), April 1991		
3.2.7.8	NUREG-1431; Standard Technical Specification Specifications	n - Westingho	use Plants
3.2.7.9	NUREG/CR-2919; Meteorological Evaluation o Nuclear Power Stations, September 1982	f Routine Eff	luent Releases At

	Beaver Valley Power Station	Procedure N			
Title:			1/2-ODC-1.01 Level Of Use:		
			General Skill Reference		
ODCM: I	ndex, Matrix and History of ODCM Changes	Revision:	Page Number: 10 of 70		
2.0.0		.			
3.2.8	Regulatory Guides:				
3.2	.8.1 RG-1.23; Meteorological Measurement Program I	For Nuclear F	Power Plants		
3.2	.8.2 RG-1.109; Calculation of Annual Doses to Man F Effluents for the Purpose of Evaluating Complian Appendix I, April 1977				
3.2	.8.3 RG-1.111; Methods For Estimating Atmospheric Gaseous Effluents In Routine Releases From Ligh Revision 1, July 1977				
3.2	.8.4 RG-1.113; Estimating Aquatic Dispersion of Efflu Routine Reactor Releases For The Purpose of Imp 1977				
3.3 <u>C</u>	ommitments				
3.3.1	3.1 10 CFR Part 20, Standards for Protection Against Radiation				
3.3.2	10CFR20.1302, Compliance with Dose Limits for Indiv	vidual Membe	ers of the Public.		
3.3.3	10 CFR Part 50, Domestic Licensing of Production and	Utilization F	acilities		
3.3.4	10CFR50.36a, Technical Specifications on Effluents fro	om Nuclear P	ower Reactors		
3.3.5	3.3.5 Appendix I to 10 CFR Part 50, Numerical Guides For Design Objectives and Limiting Conditions For Operation to Meet The Criterion "As Low As Reasonably Achievable" For Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents				
3.3.6	40 CFR Part 141				
3.3.7	3.3.7 40 CFR Part 190, Environmental Radiation Protection Standards For Nuclear Power Operations				
3.3.8	3.3.8 Licensee Response to NRC Unresolved Item 50-334/83-30-05. The Radiation Monitor Particle Distribution Evaluation showed that the Licensee must continue to use correction factors to determine particulate activity in samples obtained from the effluent release pathways.				
4.0 <u>F</u>	RECORDS AND FORMS				
4.1 <u>F</u>	Records				
4.1.1	Any calculation supporting ODCM changes shall be do retrievable document (eg; letter or calculation package)				

number.

•

. •

	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
Title:			Level Of Use:
	1: Index, Matrix and History of ODCM Changes	<u> </u>	General Skill Reference Page Number:
		3	11 of 70
4.2	Forms	• `	· · · ·
. 4.2	2.1 None		. .
	•		
5.0	PRECAUTIONS AND LIMITATIONS		
5.1	This OFFSITE DOSE CALCULATION MANUAL (ODCM methodologies to be used by Beaver Valley Power Station U (BV-2) to assure compliance with the Administrative Contro Technical Specifications. They are intended to show compli- 10 CFR 50.36a, ^(3.2.2) Appendix I of 10 CFR Part 50, ^(3.2.3) and	Unit 1 and Un ols Section of iance with 10	it 2 (BV-1) and the operating CFR 20.1302, ^(3.2.1)
5.2	This ODCM is based on the NUREG's and Generic Letter de Nuclear Regulatory Commission. ^(3.1.1, 3.1.2, 3.1.3, 3.1.4) Specific implementation of the ODCM are included in various site prutilized by the operating staff to assure compliance with Tec CONTROLS Procedure of the ODCM: ^(3.1.5)	plant proced rocedures and	ures for I documents, and are
5.3	The ODCM has been prepared as generically as possible in of future versions. However, some changes to the ODCM may such changes will be properly prepared, reviewed, and appro Administrative Control Section of the Technical Specification	be necessary	in the future. Any
5.3	3.1 An implementation procedure for control of the ODCM 1640. ^(3.1.6)	is included i	n 1/2-ADM-
5.4	This procedure also contains information that was previousl previous BV-1 and 2 Offsite Dose Calculation Manual.	y contained i	n Appendix F of the
5.4	4.1 In regards to this, the Tables that were transferred from ATTACHMENTS of this procedure will still contain a		
6.0	ACCEPTANCE CRITERIA		
6.1	All changes to this procedure shall contain sufficient justific maintain the level of radioactive Effluent Control required b 190, 10 CFR 50.36a and Appendix I to 10 CFR 50, and not reliability of effluent dose or alarm setpoint calculation. ^(3.1.7)	by 10 CFR 20 adversely im	1302, 40 CFR Part
6.	1.1 All changes to this procedure shall be prepared in accor and 1/2-ADM-1640. ^(3.1.6)	rdance with 1	/2-ADM-0100 ^(3.1.7)
	1.2 All changes to this procedure shall be reviewed and app	proved in acc	ordance with NOP-

ï

• :

)

; }

)

Bea	aver Valley Power Station	Procedure N	/umber: 1/2-ODC-1.01
Title:		Unit:	Level Of Use:
ODCM: Index. M	atrix and History of ODCM Changes	<u> </u>	General Skill Reference Page Number:
<u>`</u>		3	<u>12 of 70</u>
7.0 <u>PREREQ</u>	DUISITES		
7.1 The user of	of this procedure shall be familiar with ODCM s	structure and co	ntent.
8.0 <u>PROCEE</u>	DURE		
8.1 <u>Description</u>	on of ODCM Structure		
	DC-1.01, ODCM: Index, Matrix and History on the second sec	of ODCM chang	<u>es</u>
-			
8.1.1.1	History of ODCM Changes		
8.1.1.2	Summary of ODCM References		
8.1.1.3	List of Tables (ATTACHMENT A)		
8.1.1.4	List of Figures (ATTACHMENT B)		
8.1.1.5	Matrix of Procedures Used to Meet ODCM Co	ontrols (ATTAC	HMENT C)
8.1.1.5.1	BV-1 Radiation Monitor Surveillances		
. 8.1.1.5.2	2 BV-1 Liquid Effluent Monitor Surveillar	nces	
8.1.1.5.3	BV-2 Liquid Effluent Monitor Surveillar	nces	
8.1.1.5.4	BV-1 Gaseous Effluent Monitor Surveill	lances	
8.1.Í.5.	5 BV-2 Gaseous Effluent Monitor Surveil	lances	
8.1.1.5.0	6 BV-1 and 2 Liquid Effluent Concentration	on Surveillances	S
8.1.1.5.1	7 BV-1 and 2 Liquid Effluent Dose Survei	llances	
***8.1.1.5.8	8 BV-1 and 2 Liquid Effluent Treatment S	urveillances	•
8.1.1.5.9	9 BV-1 and 2 Gaseous Effluent Air Dose S	Surveillances	
8.1.1.5.	10 BV-1 and 2 Gaseous Effluent Particulate	e and Iodine Sur	rveillances
8.1.1.5.	·		
8.1.1.5.		`.	
8.1.1.5.			
			-
8.1.1.5.	14BV-1 and 2 Gaseous Effluent Land Use	Census Surveil	iances ·

1

÷

:

:

·	•	
Beaver Valley Power Station	Procedure Num	aber: /2-ODC-1.01
Title: ODCM: Index, Matrix and History of ODCM Changes	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Reference Page Number:
	3	13 of 70
8.1.1.5.15 BV-1 and 2 Gaseous Effluent Interlaboratory C Surveillances	Comparison	Program
8.1.2 <u>1/2-ODC-2.01, ODCM: Liquid Effluents</u> (formerly; ODCM Sections 1 and 5)	· ·	
8.1.2.1 Alarm Setpoints		
8.1.2.1.1 BV-1 Setpoint Determination Based On A Cor	nservative N	fix
8.1.2.1.2 BV-1 Setpoint Determination Based On Analy	sis Prior To	Release
8.1.2.1.3 BV-2 Setpoint Determination Based On A Cor	nservative M	ſix
8.1.2.1.4 BV-2 Setpoint Determination Based On Analy	sis Prior To	Release
8.1.2.2 Compliance With 10 CFR 20 EC Limits		
8.1.2.2.1 Batch Releases	•	
8.1.2.2.2 Continuous Releases	• * • •	
8.1.2.3 Compliance With 10 CFR 50 Dose Limits	4	
8.1.2.3.1 Cumulation Of Doses	•••	
8.1.2.3.2 Projection Of Doses	· .	
8.1.2.4 Liquid Radwaste Treatment System	1 • **	· · ·
8.1.2.4.1 BV-1 Liquid Radwaste Treatment System Cor	nponents	· · · ·
8.1.2.4.2 BV-1 Laundry and Contaminated Shower Dra	in System C	Components
8.1.2.4.3 BV-2 Liquid Radwaste Treatment System Cor	nponents	
8.1.2.5 Site Boundary for Liquid Effluents	• •	
8.1.2.5.1 Liquid Effluent Site Boundary		. · ·
8.1.3 <u>1/2-ODC-2.02, ODCM: Gaseous Effluents</u> (formerly; ODCM Sections 2 and 5)	•	
8.1.3.1 Alarm Setpoints	· · ·	
8.1.3.1.1 BV-1 Setpoint Determination Based On A Ca	Iculated Mi	x_
8.1.3.1.2 BV-1 Setpoint Determination Based On Analy	ysis Prior To	o Release

<u>}</u>-

Beaver Valley Power Station	Procedure Number: 1/2-ODC-1.01		
Title:	Unit:	1/2-ODC-1.01 Level Of Use:	
	1/2	General Skill Reference	
ODCM: Index, Matrix and History of ODCM Changes	Revision:	Page Number: 14 of 70	
8.1.3.1.3 BV-2 Setpoint Determination Based On A C	alculated M	ix	
8.1.3.1.4 BV-2 Setpoint Determination Based On Ana	alysis Prior T	lo Release	
8.1.3.1.5 BV-1/2 Setpoint Determination Based On A	Calculated	Mix	
8.1.3.1.6 BV-1/2 Setpoint Determination Based On A	nalysis Prior	To Release	
8.1.3.2 Compliance With 10 CFR 20 Dose Rate Limits			
8.1.3.2.1 Dose Rate Due To Noble Gases			
8.1.3.2.2 Dose Rate Due To Radioiodines And Partice	ulates	•	
8.1.3.3 Compliance With 10 CFR 50 Dose Limits	,		
8.1.3.3.1 Doses Due To Noble Gases			
8.1.3.3.2 Doses Due To Radioiodines And Particulate	S.		
8.1.3.4 Gaseous Radwaste Treatment System			
8.1.3.4.1 BV-1 Gaseous Radwaste Treatment System	Component	S	
8.1.3.4.2 BV-2 Gaseous Radwaste Treatment System	Component	S .	
8.1.3.5 Site Boundary for Gaseous Effluents			
8.1.4 <u>1/2-ODC-2.03, ODCM: Radiological Environmental M</u> (formerly; ODCM Section 3)	<u>lonitoring Pr</u>	<u>ogram</u>	
8.1.4.1 Program Requirements			
8.1.5 <u>1/2-ODC-2.04, ODCM: Information Related to 40 CFR</u> (formerly; ODCM Section 4)	<u>R 190</u>		
8.1.5.1 Compliance with 40 CFR 190 Dose Limits			
8.1.5.2 Report Requirements		•	
8.1.5.3 Inside the Site Boundary Radiation Doses			
8.1.5.3.1 Gaseous Effluent Site Boundary		· ·	
8.1.6 <u>1/2-ODC-3.01, ODCM: Dispersion Calculational Proce</u> (formerly; ODCM Appendix A & B)	edure and Sc	ource Term Inputs	
8.1.6.1 Dispersion and Deposition Parameters	•	. :	

L1

Be	eaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Index,]	Matrix and History of ODCM Changes	Revision:	Page Number:
8.1.6.2	BV-1 and 2 Release Conditions	<u> </u>	15 of 70
8.1.6.3	BV-1 Liquid Source Term Inputs		
8.1.6.4	BV-2 Liquid Source Term Inputs	• · · ,	,
8.1.6.5	BV-1 Gaseous Source Term Inputs,		
8.1.6.6	BV-2 Gaseous Source Term Inputs	• •	í
	ODC-3.02, ODCM: Bases for ODCM Controls merly; ODCM Appendix D)	;	
8.1.7.1	Bases 3.3.3.1: Radiation Monitoring Instrumentation	DN	
8.1.7.2	Bases 3.3.3.9: Radioactive Liquid Effluent Monito	ring Instrum	entation
8.1.7.3	Bases 3.3.3.10: Radioactive Gaseous Monitoring In	nstrumentati	on
8.1.7.4	Bases 3.11.1.1: Liquid Effluent Concentration		
8.1.7.5	Bases 3.11.1.2: Liquid Effluent Dose		· .
· 8.1.7.6	Bases 3.11.1.3: Liquid Radwaste Treatment System	n	•
8.1.7.7	Bases 3.11.1.4: Liquid Holdup Tanks	· * :.	•
8.1.7.8	Bases 3.11.2.1: Gaseous Effluent Dose Rate	·	
8.1.7.9	Bases 3.11.2.2: Dose- Noble Gases	۰ ^۱ .	
8.1.7.10	Bases 3.11.2.3: Dose - Radioiodines, Radioactive l and Radionuclides Other Than Noble Gases	Material in I	Particulate Form,
8.1.7.11	Bases 3.11.2.4: Gaseous Radwaste Treatment Syst	em	
8.1.7.12	Bases 3.11.2.5: Gas Storage Tanks	<i>i</i> •	• • • •
8.1.7.13	Bases 3.11.4.1: Total Dose		
8.1.7.14	Bases 3.12.1: REMP Program Requirements		
8.1.7.15	Bases 3.12.2: REMP - Land Use Census	· · ·	
8.1.7.16	Bases 3.12.3: REMP - Interlaboratory Comparison	Program	
	-ODC-3.03, ODCM: Controls for RETS and REMP I rmerly; ODCM Appendix C)	•	•
		· · · · ·	•

Re	aver Valley Power Station	Procedure N	
Title:		Unit:	1/2-ODC-1.01 Level Of Use:
ODCM: Index, N	Matrix and History of ODCM Changes	<u>1/2</u> Revision: 3	General Skill Reference Page Number: 16 of 70
8.1.8.1	Controls 3.0.1 thru 3.0.4: Applicability		
8.1.8.2	Controls 4.0.1 thru 4.0.4: Surveillance Requirement	nts	
8.1.8.3	Control 3.3.3.1: Radiation Monitoring Instrumenta	ation	
8.1.8.4	Control 3.3.3.9: Radioactive Liquid Effluent Moni	itoring Instru	umentation
8.1.8.5	Control 3.3.3.10: Radioactive Gaseous Monitoring	g Instrument	ation
8.1.8.6	- Control 3.11.1.1: Liquid Effluent Concentration		-
8.1.8.7	Control 3.11.1.2: Liquid Effluent Dose		
8.1.8.8	Control 3.11.1.3: Liquid Radwaste Treatment Syst	tem	
8.1.8.9	Control 3.11.1.4: Liquid Holdup Tanks		
8.1.8.10	Control 3.11.2.1: Gaseous Effluent Dose Rate		
8.1.8.11	Control 3.11.2.2: Dose- Noble Gases		
8.1.8.12	Control 3.11.2.3: Dose - Radioiodines, Radioactiv and Radionuclides Other Than Noble Gases	e Material i	n Particulate Form,
8.1.8.13	Control 3.11.2.4: Gaseous Radwaste Treatment Sy	ystem	
8.1.8.14	Control 3.11.2.5: Gas Storage Tanks		:
8.1.8.15	Control 3.11.4.1: Total Dose	•	:
8.1.8.16	Control 3.12.1: REMP Program Requirements		
8.1.8.17	Control 3.12.2: REMP - Land Use Census		
-8 : 1.8.18	Control 3.12.3: REMP - Interlaboratory Comparis	on Program	
8.1.8.19	Control 6.9.2: Annual REMP Report		
8.1.8.20	Control 6.9.3: Annual RETS Report		
8.2 <u>History</u>	Of ODCM Changes		· .
8.2.1 <u>Cha</u>	nge (1) of BV-1 ODCM (Issue 1, Effective January,	<u>1984)</u>	
8.2.1.1	This is the initial issue of the BV-1 ODCM, as pre Radiological Effluent Technical Specifications (R manual was commensurate with Amendment No. Specifications as approved by the NRC on March 2	ETS). Imple 66 to the Ur	ementation of this

Beave	er Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
tle:		Unit: 1/2	Level Of Use: General Skill Reference
DCM: Index, Matri	ix and History of ODCM Changes	Revision:	Page Number: 17 of 70
8.2.2 <u>Change</u>	(2) of BV-1 ODCM (Issue 1, Revision 1, Effect	ive October,	<u>1984)</u>
	description of the changes that were implement llows:	ed with this	revision are as
8.2.2.1.1	Section 1.0: Table 1.3-1 was revised to incl nuclides presently identified at BVPS and n		
8.2.2.1.2	Section 2.0: Equations 2.1-19 and 2.1-22 w Meeting No. BVPS-RSC-1-84 on January 3 revised to clarify flow rate terminology.		
8.2.2.1.3	Section 2.0: Section 2.2.2 was revised to de pathways for gaseous dose rate calculations radionuclides in particulate form with half 1	of I-131, trit	ium, and
8.2.2.1.4	Section 2.0: Table 2.2-13 was revised to in the maximum organ. Also, the receptor was and addition/deletion of nuclides to be cons Specifications and nuclides identified at BV	s changed from istent with the	om infant to child,
8.2.3 <u>Change</u>	(3) of BV-1 ODCM (Issue 1, Revision 2, Effect	tive July, 198	<u>36)</u>
	description of the changes that were implement llows:	ed with this	revision are as
8.2.3.1.1	Section 1.0: Provide a flow based monitor Section 1.1.2. This change makes Section 1.1.1 and current procedures.	•	
8.2.3.1.2	Section 1.0 and 2.0: Revise the 31-day dos methodology in Sections 1.3.2, 2.3.1.2, and the 31-day dose projection limits and chang methodology to be consistent with proposed	2.3.2.2. Th ged the dose	is change corrected
8.2.3.1.3	Section 2.0: Revise the Gaseous Effluent M 2.1.1 and 2.1.2. They were revised due to p for the detectors, changes in isotopic literat Channel 5 alternate monitor data. The calc contained in Calculation Packages ERS-SF	oressure corr ure, and the ulations sup	ections determined addition of SPING porting this item are
	(4) of BV-1 ODCM (Issue 2, Effective July, 19 n 1, Effective July, 1987)	987), and BV	2-2 ODCM (Issue 1,
8.2.4.1 W	With the start-up of BV-2 in the second half of 1 evision and the BV-2 ODCM required initial im the changes are as follows:	• •	-

)

•

· . :: :

)

	Beave	er Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01
Title: DDCM:	Index, Matri	x and History of ODCM Changes	Uait: <u>1/2</u> Revision: 3	Level Of Use: General Skill Reference Page Number: 18 of 70
	8.2.4.1.1	Produce functionally compatible BV-1 and BV dose rate limits and meet regulatory requirement scope of the revisions to the Unit 1 ODCM, it Also, for clarity, the draft BV-2 ODCM previo was regarded as Issue 1 (historical) and operat 1, Revision 1 of the BV-2 ODCM.	ents. Note was re-issu busly submit	that due to the led as Issue 2. itted to the NRC
	8.2.4.1.2	Section 1.0: A shared liquid radwaste system, for processing, the sharing of dilution water, a according to NUREG-0133 was incorporated	nd the appo	ortionment of dose
	8.2.4.1.3	Section 2.0: A shared <u>elevated</u> gaseous radwa mixing of gaseous radwaste and the apportion NUREG-0133 was incorporated into both OD	ment of do	
•	8.2.4.1.4	Section 2.0: Separate ground level gaseous re BV-1 ODCM was updated to incorporate the base. Gaseous source terms were revised to th BV-2 FSAR, and terms were added for calcula release.	BV-2 five y at calculate	year meteorology ed for BV-1 in the
	8.2.4.1.5	Section 2.0: The gaseous effluent monitor ala were revised as required by revisions to meteo efficiencies, and revised percentages of site do	orology, sou	urce terms, monitor
:	8.2.4.1.6	<u>Section 2.0</u> : Formal justification was provide Containment Purge Dose Rate calculations. We Containment Purge may be averaged over a ti- minutes. Since the Containment air volume co- minutes, then the maximum value for "T" is $1 = 16$).	Vhereas, th me period i hange time	e dose rate for a not to exceed 960 period is 60
8.2.		(5) of BV-1 ODCM (Issue 2, Revision 1 Effective Issue 1, Revision 2, Effective December, 1987)	e December	r, 1987), and BV-2
8'	no titl	ction 2.0: Sections 2.1.3 and 2.1.4 of both ODCM te concerning noble gas nuclides as requested by ed Beaver Valley Unit 2 - Offsite Dose Calculati 996).	a NRC lett	er dated July 14, 1987
8.2.		(6) of BV-1 ODCM (Issue 2, Revision 2 Effective (Issue 1, Revision 3, Effective June, 1989)	<u>e June, 198</u>	9), and BV-2

۲

...

.

Beaver Valley Power Station		Procedure Number: 1/2-ODC-1.01	
Title:	and History of ODCM Changes	Unit: <u>1/2</u> Revision: 3	Level Of Use: General Skill Reference Page Number: 19 of 70
8.2.6.1.1	Section 1.0 and 2.0: Both ODCMs were revis and 2.4. This addition gives a description of a the Liquid Radwaste System and the Gaseous justification 1)	nd include	tion of Sections 1.4 s flow diagrams of
8.2.6.1.2 8.2.6.1. <u>3</u>	Section 1.0: Corrected typos to BV-1 ODCM differentiation between the two f's, and add the Justification 1) Section 1.0: Re-define F_k in equation 1.3-1 of the NRC. (See Justification 1)	e division s	sign. (See
8.2.6.1.4	Section 1.0 and 2.0: Typos were corrected to ODCM equation 1.3-7; add a division sign be ODCM equation 1.3-8; add a division sign be Equation 2.1-20 of both ODCMs; change the 0.70 to 0.33. (4) Equation 2.1-24 of both OD HSP multiplier from 0.70 to 0.33. (See Justifi	tween the t tween the t HHSP to H CMs, chan	brackets. (2) BV-1 brackets. (3) ISP multiplier from
8.2.6.1.5	Section 1.0 and 2.0: Typos were also corrected words "from each reactor unit" to five places (2.3.1.2, and 2.3.2.2) of both ODCMs. This en- current requirements of the Technical Specific punctuation in Section 2.3.2.1 of the BV-1 OI Table 3.0-1 of both ODCMs. (4) Correct typ ODCMs.	Sections 1 isures compations. (2) DCM. (3)	.3.1, 1.3.2, 2.3.1.1, pliance with the) Correct Correct typos in
8.2.6.1.6	Section 2.0: Add a Reference to Section 2 of Justification 3)		DDCM. (See
8.2.6.1.7	<u>Section 2.0</u> : Add the words "from the site" to This ensures compliance with the current requ Specifications. (See Justification 2)		
8.2.6.1.8	Section 2.0: Revise BV-1 ODCM Table 2.2- iodine radionuclide mix for the Unit 1 Ventila for Xe-135m in the Containment Vacuum Put	tion Vent	and to correct a typo
8.2.6.1.9	Section 2.0: Provide re-verified $P_{i\tau}$ values for Table 2.2-13 of both ODCMs. (See Justification)		r Valley site in
8.2.6.1.10	Section 2.0: Correct the definition for the t_f v in Section 2.3.2.1 of both ODCMs. (See Just		-
8.2.6.1.11	Section 2.0: Provide re-verified R values for Tables 2.3-2 through 2.3-20 of both ODCMs.		•

Beav	er Valley Power Station	Procedure Nu		
Title:		Unit:	<u>1/2-ODC-1.01</u> Level Of Use:	
 	· · · ·	1/2	General Skill Reference	
ODCM: Index, Mat	rix and History of ODCM Changes	Revisioa:	Page Number:	
	· · · · · · · · · · · · · · · · · · ·	l3	20 of 70	
8.2.6.1.12	Appendix B: Change the particulate and i		ractions in	
	Appendix B of the BV-1 ODCM. (See Ju	stitication 3)		
8.2.6.2 T	he justification used for Change (6) to the ODO	CMs are as foll	ows:	
8.2.6.2.1	A letter dated March 2, 1989 (from the NI	C) was receive	ed by Duquesne	
0.2.0.2.1	Light regarding acceptance of the Offsite 1	· · ·	- <u>-</u>	
	NRC acceptance of the BV-1 and BV-2 O			
	Evaluation Reports (TER No. EGG-PHY-			
-	provided by the Idaho National Engineering		•	
	As stated in the letter, minor concerns are	delineated in S	ection 4 of the TFR	
	In general, these concerns are considered t			
	impact any of the calculations currently be		-	
	contributions. However, one of these con			
	reproduce the ODCM R values for the cov	-		
•	pathways when using the ODCM/NUREG-0133 methodology. These R values (along with all other ODCM R values) were re-validated VIA Calculation Package No. ERS-ATL-89-014. The results of this package showed that the R			
	values for the three aforementioned pathw	ays were in err	or. Since the R values	
	in error do not involve the controlling rec		-	
	controlling receptor is VIA the Inhalation	-	• • •	
	not the pathways subject to error) than the	-		
	adversely impact the accuracy or reliabilit	y of effluent do	ose calculations.	
8.2.6.2.2	As requested by DLC letters ND3NSM:34	431. ND1NSM	:3522, and	
	ND1NSM:3652, Technical Specifications			
•	plant implementing procedures. As part of			
	were identified in various sections of the	ODCM. This r	evision corrects the	
	anomalies identified during the verification	on effort.		
8.2.6.2.3	As delineated in letter ND1SHP:776, date	d February 12	1088 (BVDS_1	
0.2.0.2.3	ODCM Table 2.2-2, Appendix B) a series	•	-	
· •	identified between ODCM Table 2.2-2 an			
τ,∞ \	FSAR. Evaluation showed that apparent			
	filtration of SLCRS releases which is inv			
	calculation package on which the BVPS-2			
	based, is correct (i.e.; no credit was taken			
	releases). Except for revising the ODCM			
	necessary because the particulates and ioc			
	for gaseous effluent alarm setpoint. Then			
	adversely impact the accuracy or reliabili	ty of setpoint c	alculations.	

Beave	r Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01
Title: ODCM: Index, Matrix	and History of ODCM Changes	Unit: 1/2 Revision:	Level Of Use: General Skill Reference Page Number: 21 of 70
8.2.7 <u>Change (7</u>	7) of BV-1 and 2 ODCM (Issue 3, Effective Aug	ust, 1995)	_ 21.01_70
	combined ODCM, as implemented by ISSUE 3 nges:	, contains t	he following
8.2.7.1.1	Prior to ISSUE 3, BV-1 and BV-2 had individ generically equal. In an effort to simplify the ODCMs have been combined. This merger of maintain the level of radioactive effluent contr 20.1302, 40 CFR Part 190, 10 CFR 50.36a, an 50. Also, this merger will not adversely impace effluent, dose, or setpoint calculations.	implementi the individ tol required d Appendi	ng documents, the lual ODCMs will l by 10 CFR x I to 10 CFR Part
8.2.7.1.2	Section 1.0: Revised Section 1.0 (Liquid Effle with 10 CFR 20 Appendix B (20.1001 - 20.24 includes the following: (1) Revising the alar 1LW-104, RM-1LW-116, and 2SGC-RQ100] monitor detection efficiencies. (3) Updating parameters for BV-1 and BV-2. (4) Adding t [RM-1RW-100, RM-1DA-100, 2SWS-RQ10]	01), Table n setpoints . (2) Upda discharge r he alarm se	2, Col. 2 EC's. This for monitors [RM- ating the BV-1 ate and dilution rate expoints for monitors
8.2.7.1.3	Section 1.0: Revised Section 1.0 (Liquid Effl (Gaseous Effluents) to merge the BV-1 alarm BV-2 alarm setpoint calculations. For all prac Figures, and Equations were transferred to the	setpoint ca	lculations with the ses, when Tables,
	numbering was kept generically equal. The tw follows: (1) If a table was contained in both specific to BV-1 or BV-2, then an a or b was a example, Table 1.1-1 was previously included BV-2 ODCM. These tables are now numbered	ODCMs, b added to the l in the BV	ut each had data e table. For -1 ODCM and the
*-	BV-1 and BV-2 respectively. A cross referent provided in the Table Of Contents. (2) If an of ODCMs, but each had data specific to BV-1 of added to the equation. For example, Equation in the BV-1 ODCM and the BV-2 ODCM. The numbered 1.1(1)-1 and 1.1(2)-1, denoting BV cross reference for ODCM equations is provide	equation w or BV-2, the 1.1-1 was hese equati -1 and BV	as contained in both en a (1) or (2) was previously included ons are now -2 respectively. A
8.2.7.1.4	Section 3.0: Revised Section 3.0 (Radiologic Program) to list the program requirements fro Branch Technical Position (Revision 1, 1979)	m the Radi	-
8.2.7.1.5	<u>Section 4.0</u> : Revised Section 4.0 (Information provide clarified reporting requirements for the clarifications were taken from Generic Letter (NUREG-1301).	ne Special I	Report. The

Beave	er Valley Power Station	Procedure N	
		1/2	General Skill Reference
ODCM: Index. Matri	ix and History of ODCM Changes	Revision:	Page Number:
		3	22 of 70
8.2.7.1.6	Appendix A: Revised Appendix A to tran parameters from Appendix A (Tables A-2 (Tables 2.3-35 through 2.3-38). This revi For example, all dispersion parameters are ODCM.	through A-5) sion was done	to Section 2.3 for clarification.
8.2.7.1.7	<u>Appendix C</u> : This is a new Appendix to t the Radiological Effluent Technical Speci from the Technical Specifications to Appe Letter 89-01 and Generic Letter 89-01, Su This Appendix also includes selected Def the Technical Specifications (Section 1) a Surveillance Requirement statements as d Specifications (Section 3/4). These were purposes, even though they are currently o Specification.	fications (RET endix C of the opplement No. initions and Ta nd selected Ap elineated in the added to Appe	S) were transferred ODCM per Generic 1 (NUREG 1301). bles as delineated in plicability and e Technical ndix C for reference
8.2.7.1.8	<u>Appendix D</u> : This is a new Appendix to Controls were transferred from the Bases Specifications to Appendix D of the ODC	Section of the	Technical
8.2.7.1.9	<u>Appendix E</u> : This is a new Appendix to t Radioactive Effluent Release Report and Environmental Report reporting requirem the ODCM.	the Annual Ra	diological
8.2.7.1.10	There are three differences (i.e., non-editor revision when compared to the previous I Specifications. These are the only change bars. These differences are as follows:	BV-1 and BV-2	2 Technical
	•		
	· · ·		
T 194	÷		
	97 · · · ·		
	• •		

· ·

• • •

:

ţ

	Beaver Valley Power Station		Procedure Number: 1/2-ODC-1.01	
			Level Of Use: General Skill Reference	
	ODCM: Index, Matrix and History of ODCM Changes	Revision: 3	Page Number: 23 of 70	

8.2.7.1.10.1

8.2.7.1.10.2

8.2.7.1.10.3

First Difference - LLD Definition Clarification is described as follows: (1) There was a sentence removed in the LLD Standard Deviation Definitions delineated in Appendix C Tables 4.11-1 and 4.11-2. This sentence stated: "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 in milk samples)." (2) This sentence was removed by justification of NUREG-0472, Rev. 2 (i.e., this revision to the NUREG removed the sentence from Tables 4.11-1 and 4.11-2). At BV-1 and 2, there are no other radionuclides normally present in effluent samples. However, there is applicability to environmental LLD calculations due to the existence of other radionuclides in environmental samples. This sentence, therefore, will not be removed from Appendix C, Table 4.12-1. (3) Removal of the sentence from Appendix C, Tables 4.11-1 and 4.11-2 does not adversely impact the accuracy or reliability of current or past effluent LLD calculations. This change maintains 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 Part 50, and does not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations. (4) This change brings ODCM Appendix C, Tables 4.11-1 and 4.11-2 in generic agreement with NRC guidance (i.e., NUREG-0472) and industry standard.

Second Difference - Change From Semi-Annual Report To Annual Report as follows: (1) The frequency of the Radioactive Effluent Release Report was changed from Semi-Annual to Annual. This change is justified by Federal Register, Rules And Regulations (Vol. 57, No. 169, Monday, August 31, 1992), where as; 10 CFR Part . 50.36a(a)(2) states, in part. "Each licensee shall submit a report to the Commission annually that specifies the quantity of each of the principal radionuclides released to unrestricted areas in liquid and in gaseous effluents during the previous 12 months of operation...the time between submission of the reports must be no longer than 12 months..." (2) This change maintains 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 Part 50, and does not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations. Sec. Strate Sec.

Third Difference - Implementation Of New 10 CFR 20 is described as follows: (1) The definition for MEMBER(S) OF THE PUBLIC was revised to agree with the definition in 10 CFR 20.1003. (2) The definition for UNRESTRICTED AREA was modified from the definition that was in the Technical Specifications prior to transferring to the ODCM. This modification was necessary to ensure that the ODCM dose model for gaseous releases is not affected. The

Beaver Valley Power Station			^{mber:} 1/2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Index, Matrix and History of ODCM Changes		Revision: 3	Page Number: 24 of 70

modification involved adding the following sentence: "For gaseous release dose calculations, the UNRESTRICTED AREA should exclude any public road, railway, or waterway adjacent to or crossing the site that is not occupied continuously by MEMBER(S) OF THE PUBLIC". (3) The limits for liquid effluent concentration were changed from 1 times 10 CFR 20 Appendix B (20.1 - 20.601), Table II, Col. 2 MPC's to 10 times 10 CFR 20 Appendix B (20.1001 -20.2401), Table 2, Col. 2 EC's. This limit will now be referred to as the ODCM Effluent Concentration Limit (OEC). (4) For gaseous effluents, no changes were made to implement the New 10 CFR 20. As justification, when the utility adopted the RETS (1/1/84), compliance to 10 CFR 20 shifted from the MPC concept to the Unrestricted Area Dose Rate concept. The Dose Rate concept is the preferred method of controlling gaseous effluent release rate, and will continue to be used in-lieu of the MPC or EC concept. (5) Changing to the OEC limit for liquid effluents accommodates needed operational flexibility to facilitate implementation of the New 10 CFR 20 requirements. (6) For information, the general intent of the New Part 20 is that radiation doses to members of the public not exceed 100 mrems per year, which is more restrictive than the 500 mrems per year limit in the Old Part 20, and that fuel cycle licensees also comply with 40 CFR 190. The New Part 20 does not include a requirement on limiting radioactivity concentrations in effluents, which is less restrictive than the Old Part 20. (7) The basic requirements for RETS (i.e.; ODCM Appendix C Controls) are stated in 10 CFR 50.36a. These requirements indicate that compliance with the RETS will keep average annual releases of radioactive material in effluents to small percentages of the limits specified in the 10 CFR 20.106 (10 CFR 20.1302). These requirements also indicate that operational flexibility is allowed (with considerations for public health and safety) which may temporarily result in releases higher than such small percentages, but still within the MPC limits specified in the 10 CFR 20.106. The MPC's relate to an annual dose of 500 mrem. Also, 10 CFR 50.36a indicates that when using operational flexibility, best efforts shall be exerted to keep levels of radioactive materials in effluents to ALARA as set forth in 10 CFR 50 Appendix I. (8) As stated in the Introduction to Appendix B of the New 10 CFR 20, the liquid EC's are based on an annual dose of 50 mrem. Since a release concentration corresponding to a limiting dose rate of 500 mrem/year has been acceptable as a RETS limit for liquid effluents, it should not be necessary to reduce this limit by a factor of ten. (9) BV-1 and BV-2 has demonstrated that the use of the MPC's associated with the 10 CFR 20.106 has resulted in calculated maximum individual doses to a member of the public that are small percentages of the limits of 10 CFR 50 Appendix L Therefore, the use of the OEC's, which

Beaver Valley Power Station	Procedure Nur 1	nber: /2-ODC-1.01
Tide:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Index, Matrix and History of ODCM Changes	Revision:	Page Number: 25 of 70

correspond to an annual dose of 500 mrem (i.e.; 10 times the 10 CFR 20 EC's) should not have a negative impact on the ability to continue to operate within the limits of 10 CFR 50 Appendix I, and 40 CFR 190. (10) Operational flexibility is also necessary in establishing a basis for effluent monitor setpoint calculations. As previously discussed, the EC's stated in 10 CFR 20 relate to a dose of 50 mrem in a year. This is too restrictive to base effluent monitor setpoint calculations. For many liquid effluent release situations, the monitor background is high, which could result in a monitor setpoint that is approximately equal to the monitor background. (11) In summary, to accommodate operational flexibility needed for effluent releases, the limits associated with the liquid release concentration (i.e.; the OEC) are based on 10 times the EC's stated in the 10 CFR 20. The multiplier of 10 is used because the annual dose of 500 mrem (10 CFR 20 MPC bases) is a factor of 10 higher than the annual dose of 50 mrem (10 CFR 20 EC bases). Compliance with the 100 mrem dose limit of the 10 CFR 20.1302 will be demonstrated by operating within the dose limits of 10 CFR 50 Appendix I, and 40 CFR 190 (which are also ODCM Controls for liquid and gaseous effluents). Implementation of the 10 CFR 20 for liquid effluents maintains 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 Part 50, and does not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

In summary, Per Generic Letter 89-01, the transfer of RETS procedural details fulfills the goal of the USNRC Policy Statement for Technical Specification improvements. It is not the USNRC's (or DLC's) intent to reduce the level of radioactive effluent control. Rather, the intent is to provide programmatic controls for RETS (as delineated in Technical Specification 6.8.6) and allow for relocation of the procedural details of the RETS to the ODCM.

3.2.8 <u>Change (8</u>	3) of BV-1 and 2 ODCM (Issue 3, Revision 1, Effective October, 1995)
	escription of the changes that were implemented with this revision are as ows:
8.2.8.1.1	Index: Editorial changes were made for clarity. (See justification 1)
8.2.8.1.2	Section 1.0: Revised Nb-95 and Nb-97 dose factors in Table 1.3-1 due to changing the niobium bioaccumulation factor. (see justification 2)
8.2.8.1.3	<u>Appendix A</u> : A change was made to Table 1.1 so that the letter A would proceed the table number. (See justification 1)

8.2.7.2

Beave	er Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
itle:		Unit: 1/2.	Level Of Use: General Skill Reference
DDCM: Index, Matri	x and History of ODCM Changes	Revision:	Page Number: 26 of 70
8.2.8.1.4	<u>Appendix B</u> : A descriptive paragraph was Appendix. Also, changes were made to th proceed the table numbers. (See justificati	e tables so that	
8.2.8.1.5	Appendix C: Descriptive paragraphs were Appendix (See justification 1). Removed and surveillance requirements for gaseous [2RMQ-RQ301, 2RMQ-RQ303 and 2HVI 4.3-13 (See justification 3). Added alterna measuring devices for the three gaseous ef and 4.3-13 (See justification 4). Revised S 4.11.1.1.3 and 4.11.1.1.4 and notes e and g Building sump sampling requirements (Sec	the process flo effluent radiat -RQ112] fror te system efflu fluent pathway Surveillance R 5 of Table 4.11	w rate operability ion monitors n Tables 3.3-13 and uent flow rate ys to Tables 3.3-13 - equirements -1 to clarify Turbine
8.2.8.1.6	<u>Appendix D</u> : Descriptive paragraphs were Appendix. (See justification 1)	e added at the	front of the
8.2.8.1.7	<u>Appendix E</u> : Descriptive paragraphs were Appendix. (See justification 1)	added at the f	front of the
8.2.8.1.8	<u>Appendix F</u> : This is a new Appendix to the procedure references for Radiological Effl (RETS) that were transferred from the Tech Matrix. (See justification 1)	uent Technica	I Specification
8.2.8.2 Th	e justification used for change (8) to the ODC	M are as follo	ws:
8.2.8.2.1	These changes are considered editorial in the changes will maintain the level of radioact CFR 20.1302, 40 CFR Part 190, 10 CFR 50. Also the editorial changes will not adreliability of effluent dose or setpoint calc	tive effluent co 50.36a, and Ap versely impact	ontrol required by 10 pendix I to 10 CFR
	This change resulted from revising the bio niobium from the value posted in Table A Revision 1, 1977 (30,000 pCi/kg per pCi/ BF (as documented and justified in Appen ERS-ATL-83-027) merely removes the co organism uptake, then the change will ma effluent control required by 10 CFR 20.13 50.36a, and Appendix I to 10 CFR 50. Al not adversely impact the accuracy or relia calculation.	-1 of Regulato l). Since this o indix A to Calconservatism as intain the leve 02, 40 CFR P lso, removing	bry Guide 1.109, change in niobium ulation Package No. sociated with 1 of radioactive art 190, 10 CFR the conservatism will
8.2.8.2.3	This change removes the process flow rate requirements for BV-2 Gaseous Effluent	•	

.... • •

Beaver Valley Power Station	Procedure N	
Title:	Unit:	1/2-ODC-1.01 Level Of Use:
	1/2	General Skill Referend
ODCM: Index, Matrix and History of ODCM Changes	Revision:	Page Number:
	- 3	27 of 70
DO201 20MO DO202 and 2000 DO1121	from Annon	dir C Tablas 2 2 12
RQ301, 2RMQ-RQ303 and 2HVL-RQ112]		
and 4.3-13. These items were removed from		
provided in Calculation Package No. ERS-A		
and a no significant hazards evaluation were		
submitted it to the NRC via TSCR No. 2A-6	•	
withdrawn in 1993 in an effort to alleviate a	ny further de	elays associated with
approval of TSCR No. 1A-175/2A-37 (Gen	eric Letter 89	9-01
implementation). Removal of these require	ments from t	he ODCM will
maintain the level of radioactive effluent co	ntrol require	d by 10 CFR
20.1302, 40 CFR Part 190, 10 CFR 50.36a	-	-
Also removal of these items will not adverse		
reliability of effluent dose or setpoint calcul		•
summary of the justification. (1) BVPS-1		
and will continue to use design (maximum)		• •
Dose & Dose Rate Calculations, rather than	•	
normal plant operation. (2) BVPS-2 UFSA		
the source term for these three pathways are	-	
are not included in UFSAR Tables 11.3-1 th	-	
expected and design releases for each poten		
The DLC commitment to Regulatory Guide		
the BVPS-2 UFSAR) is not affected. This l		
used during and after postulated accident co		
flow rate instruments were not used in any a	accident anal	ysis, nor are they
used to assess plant conditions during and f	ollowing an a	accident. (4) The
DLC commitment to Regulatory Guide 1.2	l, Rev. 1 (Se	ction 1.8-1 of the
BVPS-2 UFSAR) is not affected. RG 1.21,	Section C.2	(Location of
Monitoring) states in part: "All major and p		-
release of radioactive material during norm		
anticipated operational occurrences, should	-	· · ·
effluent volume, rates of release, and specif		
insofar as practical" As previously state		
instruments are located on effluent pathway		
source term. (5) BVPS-2 UFSAR Sections		
the building ventilation system for these thr	-	
related and are not required to perform any		
There is no effect to the Noble Gas Monitor		•
pathways. The Noble Gas Monitors are stil		
intended functions as described in BVPS-2	UFSAR Sec	tion 11.5.2.4.
· · ·		
and the second		· ·
and the second		
		-
	•	

Beaver Valley Power Station		Procedure Number: 1/2-ODC-1.01	
ĩtle:		Unit:	Level Of Use:
		1/2	General Skill Reference
DCM: Index, Matri	x and History of ODCM Changes	Revision:	Page Number: 28 of 70
8.2.8.2.4	This change adds alternate system effluent the three BV-1 gaseous effluent pathways t 4.3-13. A 10 CFR 50.59 safety evaluation safety question is involved by adding the al Appendix C Tables 3.3-13 and 4.3-13. This following: (1) There is no increase in the accidents or malfunctions of equipment im creation of a possibility for an accident or r than any evaluated previously. (3) There i safety. (4) Also, since this change merely that meet the same surveillance requirement the change will maintain the level of radioa 10 CFR 20.1302, 40 CFR Part 190, 10 CFF CFR 50. Also, addition of the alternate flo adversely impact the accuracy or reliability calculations.	o Appendix C has concluded ternate measu s conclusion i probability or portant to safe nalfunction of s no reduction adds alternate its of the prim active effluent & 50.36a, and w rate measur	Tables 3.3-13 and I that no unreviewed ring devices to s based on the consequences of ety. (2) There is no a different type in the margin of measuring devices ary channel, then control required by Appendix I to 10 ing devices will not
8.2.8.2.5	This change to the ODCM clarifies Turbing requirements and clarifies effluent related a of radioactivity in the secondary system. The documented and justified in Calculation Para Also, since these clarifications were shown 1301 (superseding NUREG-0472) and the clarification will maintain the level of radio by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50. Also, the clarifications will not a reliability of effluent dose or setpoint calcu- safety evaluation has concluded that no un- involved by clarifying these actions. This following: (1) There is no increase in the accidents or malfunctions of equipment im- creation of a possibility for an accident or a than any evaluated previously. (3) There is safety.	actions associa These clarificat ackage No. ER to meet the in BVPS-1 and 2 oactive effluer CFR 50.36a ar dversely impa- alation. Also, reviewed safet conclusion is l probability or portant to safet malfunction of	ated with detection tions are S-ATL-95-006. Intent of NUREG- 2 UFSAR's, then the at control required and Appendix I to 10 ct the accuracy or a 10 CFR 50.59 ty question is based on the consequences of ety. (2) There is no f a different type
	(9) of BV-1 and 2 ODCM (Issue 3, Revision 2) description of the changes that were implement		
	llows:		
8.2.9.1.1	Index: Editorial changes were made for cl	arity. (See Ju	stification 1)
8.2.9.1.2 Section 1.0: Clarifying statements were added to Tables 1.2-1a and 1.2-1b to			1.2-1a and 1.2-1b to

1_

8.2.9.1.2 <u>Section 1.0</u>: Clarifying statements were added to Tables 1.2-1a and 1.2-1b to show that the recirculation times listed are based on historical recirculation rates. Figure 1.4-3 was added to show BV-1 and 2 liquid Effluent Release Points. (See Justification 1)

Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-1.01
Title:	Unit:	Level Of Use:
	<u>1/2</u> Revision:	General Skill Referen Page Number:
ODCM: Index, Matrix and History of ODCM Changes	3	29_of 70
8.2.9.1.3 <u>Section 3.0</u> : Removed the option to perform l at the site boundary in a sector with the highes		• • •
8.2.9.1.4 <u>Appendix C</u> : Added plant specific Mark Nun 3.3-13 and 4.3-13 (See Justification 1). Corre	cted typogr	aphical errors on
Surveillance Requirement 4.11.4.1.1 (See Just statements from NUREG-1301 and the Radio		
Technical Position to Tables 3.12-2 and 4.12-	1 (See Justi	fication 1).
Removed the option to perform broad leaf veg boundary in a sector with the highest D/Q (Se		
	o Justinoau	011 <i>2</i>).
8.2.9.1.5 <u>Appendix E</u> : Corrected typographical error of	n Table 6.9	-1. (See
Justification 1)		\
8.2.9.1.6 . <u>Appendix F</u> : Added procedure details to Tabl Justification 1)	es 11, 12 a	nd 13. (See
8.2.9.2 The justification used for Change (9) to the ODCM	are as follo	ws:
8.2.9.2.1 These changes are considered editorial in natu	re. The ch	anges either correct
typographical errors or add editorial details fr		0
documents. Therefore, these changes will ma		• • • •
effluent control required by 10 CFR 20.1302,	40 CFR Pa	rt 190, 10 CFR
50.36a and Appendix I to 10 CFR 50. Also, t		-
adversely impact the accuracy or reliability of	effluent do	se or setpoint
calculations.	•	
8.2.9.2.2 This change removes the option to perform by	oad leaf ve	getation sampling at
the site boundary (in a sector with the highest census. Per NUREG-1301 and the Radiologi this option does not apply to plants with eleva	D/Q) in lie cal Branch ated release	eu of the garden Technical Position, s. Since BV-1 and 2
have elevated releases, the option should not garden census showed that the option was new Since this change removes an option that show	ver exercise	d at BV-1 and 2.
change will maintain the level of radioactive CFR 20.1302, 40 CFR Part 190, 10 CFR 50.3 50. Also, removal of the option will not adve	effluent cor 66a and App	ntrol required by 10 pendix I to 10 CFR
reliability of effluent dose or setpoint calculat		
reliability of effluent dose or setpoint calculat 8.2.10 <u>Change (10) of BV-1 and 2 ODCM (Issue 3, Revision 3,</u>	Effective Ju	<u>ine 1997)</u>
•		
8.2.10 Change (10) of BV-1 and 2 ODCM (Issue 3, Revision 3,	with this re-	vision is as follows:

Reatio	r Valley Power Station	Procedure N	•
	a vancy rower Station		<u>1/2-ODC-1.01</u>
litle:		Unit: 1/2	Level Of Use: General Skill Reference
		Revision:	Page Number:
ODCM: Index, Matrix	and History of ODCM Changes	3	30 of 70
8.2.10.2.1	This change is considered editorial in natur item that was previously located on BV-2 T 5.1-2. Since BV-2 Technical Specification figure, then the gaseous release point for th needed transferred to the ODCM. Therefore editorial, the change will maintain the level required by 10 CFR 20.1302, 40 CFR Part Appendix I to 10 CFR 50. Also, the editor impact the accuracy or reliability of effluen	Fechnical Spectrum Amendment the BV-2 Turbin re, since this of l of radioactiv 190, 10 CFR ial change will at dose or setp	cification Figure 83 removed this ne Building Vent change is considered e effluent control 50.36a and Il not adversely oint calculations.
8.2.11.1 A d	11) of BV-1 and 2 ODCM (Issue 3, Revision 4) lescription of the changes that were implemen lows:	·	
8.2.11.1.1	Index: Editorial changes were made for cla	arity.	
8.2.11.1.2	Section 3.0: The distances for the environment were revised to show a more accurate meas Unit 1 Containment Building. The actual s remain unchanged. Also, the 4 individual locations were consolidated into 1 map. The Condition Report CR 980353.	surement from sample locatic quadrant map	the center of the ons and descriptions s showing TLD
8.2.11.1.3	Section 4.0: Added clarifying statements a effluents for MEMBERS OF THE PUBLIC site boundary are derived and reported. The Condition Report CR 971578.	C conducting	activities inside the
	· · · ·		

•••

•

: .

L.I.

•

8.2.12 Change (12) of BV-1 and 2 ODCM (Issue 3, Revision 5, Effective November 1998)

1

8.2.12.1 A description of the changes that were implemented with this revision are as follows.

. :

ł

\$

8.2.12.1.1 Index: Editorial changes were made for clarity. (See Justification 1.)

Unit: 1/2 Revision: 3 tion of radior n Factor is >	1/2-ODC-1.01 Level Of Use: General Skill Reference Page Number: 32 of 70 nuclide 1. (See Justification
n Factor is >	nuclide
on for the up 1 additional r e Justificatio	method after
npliance with MEMBER(190.02(k). mary and altent advertently of ded clarific ste Gas Stora ndition Repo "e" of Table a Corrective n obvious on etermination	(See Justification 1.) ernate omitted from change cation to Table 4.11- age Tanks are to be ort CR 981489. (See 4.11-2 as to the e Action to CR nission on Table of Direct Radiation. ges to Table 3.12-1
	try Manual to Table 981488. (See
CM are as fo	ollows:
from previou	hanges either correct usly approved station level of radioactive
o, the editoria	art 190, 10 CFR al changes will not ose or alarm setpoint
	e Justification EMBER(S) (npliance with MEMBER(190.02(k). mary and alter advertently of ded clarific ste Gas Stora ndition Report "e" of Table a Corrective n obvious on etermination opriate change ee Justificati the Chemist Report CR 9 CM are as for ature. The ch from previou naintain the 1 2, 40 CFR P o, the editoria

LI.

•

Beaver	Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
Title:		Unit:	Level Of Use:
		1/2	General Skill Reference
ODCM: Index, Matrix	and History of ODCM Changes	Revision:	Page Number: 33 of 70
8.2.12.2.2	These changes involve the upstream environmethod and sample site. Since these changes of NUREG-1301, and BVPS-1 and 2 UFSAR maintain the level of radioactive effluent con 20.1302, 40 CFR Part 190, 10 CFR 50.36a and Also, the change will not adversely impact the effluent dose or alarm setpoint calculations. evaluation has concluded that no unreviewed adding an additional sample site and sample is based on the following: (1) There is no increase consequences of accidents or malfunctions of (2) There is no creation of a possibility for a different type than any evaluated previously. the margin of safety.	were show the trol required and Appendix e accuracy of Also, a 10 (safety ques method. The case in the p equipment n accident of	n to meet the intent change will d by 10 CFR x I to 10 CFR 50. or reliability of CFR 10.50 safety tion is involved by his evaluation is probability or important to safety. or malfunction of a
the state of the s	3) of BV-1 and 2 ODCM (Issue 3, Revision 6,	· ,	
8.2.13.1 A de follo 8.2.13.1.1	scription of the changes that were implemente ws: <u>Index</u> : Editorial changes were made for clari		revision is as
		. tyłć / 5	•
8.2.13.1.2	<u>Section 3.0</u> : Updated figure number and table redundant upstream environmental surface w		
8.2.13.1.3	<u>Appendix C</u> : Made editorial changes for clar SHUTDOWN and STARTUP. Changed def agreement with definition provided in Unit 1 Amendments 220/97. Changed designations instruments on Tables 3.3-12, 4.3-12, 3.3-13 "Pri" and "Alt". Clarified use of the Flow Ra Cooling Tower Blowdown Line on Tables 3. Unit 1/2 combined instrument [FT-1CW-101 the individual Unit 1 and Unit 2 instruments FT101] are the alternates. Updated Actions describe use of comparable alternate monitor channels are INOPERABLE. Clarified Tabl for Unit 2 gaseous effluent monitors. Clarifi show that applicability is for batch purges of Changed reference of Special Report compli Technical Specification 6.9.2f to 10 CFR 20 permitted by Unit 1/2 Technical Specificatio Clarified note b of Table 4.11-2 regarding sa frequencies. ClarifiedControls 3.12.1 and 3.1 NUREG-1301.	inition for C /2 Technica for primary and 4.3-13 ate Measure 3-12 and 4. -1] is the p [FT-1CW-1 24, 25 and 2 ing channel e 3.3-13 Ac ed Table 3. the reactor ance require .2203 and 1 n Amendme mpling and	DDCM to ensure al Specification y and alternate from "P" and "A" to ment Devices for the 3-12 to show that the rimary and both of 101] and [2CWS- 26 of Table 3.3-12 to 18 when the primary tion 28 applicability 3-13 Action 30 to containments. ement from 0 CFR 50.4 as ents 220/97. surveillances

· •

. . ..

• •

.

Rea	ver Valley Power Station	Procedure N	
		<u> </u>	
~		1/2	Level Of Use: General Skill Reference
CM. Index Ma	trix and History of ODCM Changes	Revision:	Page Number:
		3	<u>34 of 70</u>
8.2.13.1.4	Appendix E: Made editorial changes for of Special Report compliance requirement for to 10 CFR 20.2203 and 10 CFR 50.4 as per Specification Amendments 220/97. Chan REMP report from May 1 to May 15 as per Specification Amendments 220/97. Chan E: 6.9-1 to ensure consistency with NURE	om Technical ermitted by Un ged submittal ermitted by Un ged column he	Specification 6.9.2f hit 1/2 Technical date of annual hit 1/2 Technical
8.2.13.2	The justification used for change (13) to the OD		ws:
8.2.13.2.1	All changes are considered editorial in nat intent of the original specification or add e guidance document (NUREG-1301) or red Amendments. Therefore, since these chan changes will maintain the level of radioac CFR 20.1302, 40 CFR Part 190, 10 CFR 50. Also, the editorial changes will not ad reliabilityofeffluent dose or set point calcul	equivalent iten cent Technical iges are consid tive effluent co 50.36a and Ap lversely impac	ns form the standard Specification dered editorial, the ontrol required by 10 pendix I to 10 CFR
. 8.2.14.1 I	e (14) of BV-1 and 2 ODCM (Revision 14, Effe Prior to this ODCM change, the change number Revision numbers. For example, the last impler out carried an Issue 3, Revision 6 designation. (14), consecutive Revision numbers will begin v	s did not matc nented ODCM Therefore, as c	h the Issue and I change was (13), of this ODCM change
	A description of the changes that were impleme follows:	nted with this	revision is as
8.2.14.2.1	Index: Editorial changes were made for c reports CR 982097, CR 992652 and CR 9	- · ·	
8.2.14.2.2	Appendix C: Editorial changes were made typographical error on Table 3.3-12 in reg the grab sampling requirement from 8 hou Action 24 (NUREG-1301, Table 3.3-12, A change). Enhanced the Channel Function 12 from Q(6) to Q(1) for RM-1DA-100 (0 Report CR 993021). Add clarification to the plant specific Mark Numbers for the p Flow Rate Measuring Devices. Corrected 3.3-13 Action 27. Separated Action 28 of Action 28 requirements for System Efflue Devices/Process Flowrate Monitors and i for Sample Flow Rate Measuring Devices Added clarification to Table 3.3-13 to show	ards to FT-CV urs to 12 hours Action 36 and al Test require Corrective Act Table 3.3-13 a primary and all a typographic f Table 3.3-13 ent Flow Rate ndividual Acti s/Sample Flow	W-101-1. Changed for Table 3.3-12 37 allow this ements on Table 4.3- ion to Condition and 4.3-13 to show ternate BV-1 Sample cal error on Table into individual Measuring on-28 requirements vrate Monitors.

Beaver Valley Power Station		Procedure Nu	· 4
Title:		Unit:	1/2-ODC-1.01 Level Of Use:
		1/2	General Skill Refe
ODCM: Index, Matrix and History of C	DDCM Changes	Revision: 3	Page Number: 35 of 70
annlicable for	continuous releases. Added	an alternate m	
	bllection (ie.) local monitor r		
	n is lost to the Control Roon		
	29. Changed the grab samp		-
	able 3.3-13 Action 29 and A		
	n 47 allows this change). C		
	n regards to liquid composite		
notation.			,
	• • • • • • •	• • • • •	
	Made editorial changes for c		-
	nary and alternate instrumen		
	and 4.3-13. Added appropri		
	Appendix 1) when these lo		
	urveillances and Actions (Co	orrective Actio	n to Condition
Report CR 992	2032).	•	·••
8.2.14.3 The justification use	d for change (14) to the OD	CM is as follo	ws:
	 Applie and the second se	.,	
	changes are considered edito		•
	0CFR50.59 applicability. In		
	not impacted, because the ch		+
	ecification, add plant specifi		
• • •	ns from the standard guidan	•	-
	se changes will maintain the		
	ed by 10CFR20.1302, 40CFI 10CFR50. Also, these chan		
	liablity of effluent dose or al	-	• •
	naonty of officiant dose of a		aloulations.
8.2.15 Change (15) of BV-1 and 2	2 ODCM (Revision 15, Effe	ctive August 2	2000)
8.2.15.1 A description of the	changes that were implement	nted with this r	evision is as
follows:			
		•	
	al changes were made for cl		
• • • •	1682 was added. Reference	to NRC unres	olved Item 83-30-
was added.	- 建油油 有限的 人名	e provincia de la companya de la com	
1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
· · · ·	e ve promise a ser		· .
		· • .	
	●1917年) 1917年日 1917 日 1917年日 1917 日 111 日 111 日 111 日 111 日 111 日 1111		
and the second		•	
		·	
			-

· •

•••

Beave	r Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01
fitle:		Unit:	Level Of Use:
DDCM: Index, Matrix	x and History of ODCM Changes	1/2 Revision: 3	General Skill Reference Page Number: 36 of 70
8.2.15.1.2	<u>Appendix C</u> : Editorial changes were made for of Table 3.3-13 into Action 28A and 28B to Action 28A requirements for system/process Action 28B requirements for sampler flow r alternate method in lieu of 4 hour flow rate of design values for system/process flow rate) of 3.3-13 Action 28A when the system/process Annotated Actions 30 of Table 3.3-13 into A differentiation between Action 30A requirer containment purges and Action 30B requirer	show differe flow rate measuren estimations (i to show comp flow rate mo Action 30A an nents for BV	ntiation between easurement and nent. Added an ie; assume ODCM pliance with Table onitor is inoperable. nd 30B to show -1 reactor
8.2.15.2 The	e justification used for change (15) to the ODC	M is as follow	ws:
8.2.15.2.1	Some of these changes are considered editor were screened for 10CFR50.59 applicability the BVPS-1 and 2 UFSAR's. Since the edit the original specification, then these change radioactive effluent control required by 10C 10CFR50.36a, and Appendix I to 10CFR50 impact the accuracy or reliability of effluent calculation.	and determi orial changes s will mainta FR20.1302, Also, these	ned not to impact s clarify the intent of in the level of 40CFR Part 190, changes will not
8.2.15.2.2	The change to allow use of design (maximu hour flow rate estimations (for five of the ei pathways) was screened for 10CFR50.59 ap impact the BVPS-1 and 2 UFSAR's. The 4 these effluent release pathways have never to Dose Rate Calculations. The method for us Dose and Dose Rate Calculations remains u 1 and BVPS-2 is currently using, and will co system flow rates in ODCM Dose and Dose gaseous effluent release pathways. This is r response to NRC Unresolved Item 50-334/8 Also this change is considered similar and v for ODCM change (8) that removed all of the and surveillance requirements for the other pathways. Based on the above, these chang radioactive effluent control required by 100 10CFR50.36a, and Appendix I to 10CFR50 impact the accuracy or reliability of effluent calculation.	ght gaseous of plicability ar hour flow ra been used in (e of process) nchanged. F ontinue to use Rate Calcula eccessary to of 3-30-05 is no vithin the jus he process flo three gaseous es will maint FR20.1302, Also, these	effluent release ad determined not to te estimations for ODCM Dose and flow rates in ODCM for example, BVPS- e design (maximum) ations for all eight ensure that DLC ot compromised. tification provided ow rate operability s effluent release tain the level of 40CFR Part 190, e changes will not

Beaver Valley Power Station		Procedure Number: 1/2-ODC-1.01		
itle:		Unit:	Level Of Use:	
DOM. Indee Martin - 17	liston of ODCM Channes (1/2 Revision:	General Skill Referenc Page Number:	
DCM: Index, Matrix and H	listory of ODCM Changes	3	<u>37 of 70</u>	
8.2.16 <u>Change (16) of 1</u>	<u> 3V-1 and 2 ODCM (Effective April 2002)</u>	; *		
8.2.16.1 A descript follows:	ion of the changes that were implemented	with this r	evision are as	
deli	entire BV-1 and 2 ODCM was converted the neated in 1/2-ADM-0100. As part of this part of this part of this procedures as follows:	• •		
8.2.16.1.1.1	<u>1/2-ODC-1.01, Rev 0; ODCM:</u> Index, N Changes (formerly; ODCM Index and A			
8.2.16.1.1.2	<u>1/2-ODC-2.01, Rev 0; ODCM: Liquid I</u>	Effluente (formerly: ODCM	
0.2.10.1.1.2	Section 1 and 5)		ionneny, ODCM	
8.2.16.1.1.3	1/2-ODC-2.02, Rev 0; ODCM: Gaseous	s Efflüents	(formerly; ODCM	
and the second	Section 2 and 5)	••• •• •	(),	
8.2.16.1.1.4	<u>1/2-ODC-2.03, Rev 0;</u> ODCM: Radiolo Monitoring Program (formerly; ODCM	-		
	Momoning Program (formerry, ODCM)	Section 5)	,. · · · ·	
8.2.16.1.1.5	<u>1/2-ODC-2.04, Rev 0;</u> ODCM: Informa (formerly; ODCM Section 4)	tion Relate	ed to 40CFR190	
n an george and an	(formerly; ODCM Section 4)	· ·		
8.2.16.1.1.5 8.2.16.1.1.6	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispers	ion Calcul	ational Procedure	
n an george and an	(formerly; ODCM Section 4)	ion Calcul	ational Procedure	
n an george and an	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispers	ion Calcul CM Appen	ational Procedure dix A & B)	
8.2.16.1.1.6	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersion and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D)	ion Calcul CM Appen or ODCM	ational Procedure dix A & B)	
8.2.16.1.1.6 8.2.16.1.1.7	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispers and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D)	ion Calcul CM Appent or ODCM	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersion and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control	ion Calcul CM Appent or ODCM s for RET	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Appent or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersion and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Appent or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Appent or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispers and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Append or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Append or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Append or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Append or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul CM Append or ODCM s for RET C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul 2M Append or ODCM s for RETS C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul 2M Append or ODCM s for RETS C and E)	ational Procedure dix A & B) Controls (formerly;	
8.2.16.1.1.6 8.2.16.1.1.7 8.2.16.1.1.8	(formerly; ODCM Section 4) <u>1/2-ODC-3.01, Rev 0;</u> ODCM: Dispersi and Source Term Inputs (formerly; ODC <u>1/2-ODC-3.02, Rev 0;</u> ODCM: Bases for ODCM Appendix D) <u>1/2-ODC-3.03, Rev 0;</u> ODCM: Control Programs (formerly; ODCM Appendix 0)	ion Calcul 2M Append or ODCM s for RETS C and E)	ational Procedure dix A & B) Controls (formerly;	

Beave	r Valley Power Station	Procedure Number: 1/2-ODC-1.01
Index, Matrix	and History of ODCM Changes	Unit: Level Of Use: 1/2 General Skill Refer Revision: Page Number: 3 38 of 70
8.2.16.1.2	Procedure 1/2-ODC-3.02, Rev 0: Technical S was duplicated in the Bases for ODCM Contro Technical Specification Amendments 1A-246	ols as permitted by Unit 1/2
8.2.16.1.3	Procedure 1/2-ODC-3.03, Rev 0: Portions of 3.3.3.1 (including portions of Tables 3.3-6 and ODCM Controls as permitted by Unit 1/2 Tec Amendments 1A-246/2A-124. ^(3.2.6.8) Specific High Range Channels of Noble Gas Effluent I	14.3-3) were transferred to the hnical Specification ally, this includes the Mid and Monitors [RM-1VS-109 (7 and
-	9), RM-1VS-110 (7 and 9), RM-1GW-109 (7 and 109D], the Atmospheric Steam Dump Va Discharge Monitors [RM-1MS-100A, B and C Pump Turbine Exhaust Monitor [RM-1MS-10 Monitoring (PMM) was also added for clarific when the primary instrument is inoperable. A considered an editorial change because it mere (or appropriate form number), which were inc approved station documents.	lve/Code Safety Relief Valve [] and Auxiliary Feedwater []]. The Preplanned Method of cation of necessary actions ddition of the PMM's are ely specifies the asset number
8.2.16.1.4	<u>Procedure 1/2-ODC-3.03, Rev 0</u> : Added clarif 3.3.3.9 Table 3.3-13 to show that Action 30A to the initial batch purge of the reactor contain releases of reactor containment atmosphere (i. are considered continuous releases.	and Action 3B are applicable ment atmosphere. All other
8.2.16.1.5	Procedure 1/2-ODC-3.03, Rev 0: Added spec ODCM Control 3.3.3.10 Table 3.3-13 and Tak Flow Rate Monitor flow transmitters [2HVS- 2HVL-FTT112-1 and 2RMQFTT303-1] may b when the primary instruments [RM-11 Monite 2RMQ-RQ301, 2HVL-RQ112 and 2RMQ-RQ INOPERABLE. This is considered an editori monitoring channel (i.e.; RM-11 Monitor Item its input from these same flow transmitters.	ble 4.3-13 to show that Sample FIT101-1, 2RMQ-FIT301-1, e used as comparable alternate or Item 28 for 2HVS-RQ101, Q303], respectively, are al change because the primary
8.2.16.1.6	<u>Procedure 1/2-ODC-3.03, Rev 0</u> : Added nota Table 3.3-13 and Table 4.3-13 to show that [I be used as a comparable alternate to [RM-1G releases. However, since [RM-1GW-109 Cha automatic isolation of gaseous waste decay or notation was also added to prevent using this alternate for batch releases. This is considered merely specifies the asset number of a redund channel that was included in previously appro-	RM-1GW-109 Channel 5] may W-108B] for continuous annel 5] cannot perform an storage tank releases, then monitor as a comparable d an editorial change because ant alternate monitoring

.

Procedure N	
·	1/2-ODC-1.01
	Level Of Use:
	General Skill Reference
	Page Number: 39 of 70
-	ents for "Particulate
	3-13 and Table 4.3-
-	
-	e document used for
•	the clarification
e for the "P	articulate and Iodine
ty Monitors	н
I is as follo	ws:
	the ODCM manide
	the ODCM provide
	diation conditions
-	t area surveys be
	rability be provided
not impact	or reference the
ns require th	at plant operation
- ,	
nitors trans	ferred to the ODCM
ant paramet	ers following an
	G-0737. However,
	variables that have
	,501 J 1.
e Amendm	ents conclude that
	CM do not reduce the
	future changes made
uiring a lic	ense amendment per
• 4	
	1 0 11 .1
	el of radioactive
	art 190, 10 CFR
	ges will not impact
-	oint calculation.
alarm setpo	
alarm setpo <u>02)</u>	
<u>02)</u>	
<u>02)</u>	revision are as
	0 Tables 3. ine Sampler RC guidanc 01) contains e for the "P ty Monitors I is as follor ansferred to l of high ra- effluents. T ire only that ns of inoper not impact on s require the onitors trans ant paramet s of NURE st accident be A or Cate se Amendm to the ODC ated. Rather equired for ontinue to the manner as to s will be co- puiring a lice

)

1

;

(ر ۱۰ (ر

;

· · · · ·

• • •

.

.

Beaver Valley Power Station		Procedure Number:		
		_	1/2-ODC-1.01	
· · · · · · · · · · · · · · · · · · ·	and History of ODCM Changes	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Reference Page Number:	
	and History of ODCM Changes	3	40 of 70	
8.2.17.1.1	Procedure 1/2-ODC-3.03, Rev 1: Technical Liquid Storage Tank Activity Limits, and LC Tank Activity Limits were transferred to OD 3.11.2.5 respectively as permitted by Unit 1/ Amendments 1A- 250/2A-130. ^(3.2.6.9)	CO 3.11.2.5, CM Control	for Gas Storage s 3.11.1.4 and	
8.2.17.1.1 -	.1 As part of the preparation work for tra Activity Limits to the ODCM, the 10 (re-verified and documented in Calcular 007. ^(3,2,3,9) The results of this calculati limits to ensure that the 10CFR20 App Limits will be maintained should an ac contents occur. Previously, LCO 3.11 Curies for each of the four tanks listed documentation for derivation of the 10 located in the records storage system.	Curie Limit f tion Package on provide t bendix B Tab ccidental rele .1.4 used a g . However,	For these tanks was ERS-ATL-95- ank specific activity ble 2, Col. 2 EC ease of the tank(s) generic limit of 10 formal	
8.2.17.1.1	.2 In addition, individual tank Activity li 1 and 2 Refueling Water Storage Tank added to this ODCM Control. The Su determination of RWST Activity will days like the other Liquid Storage Tan is not added to the RWST's on a week surveillance for determination of (RW within 7 days of returning reactor cavi back to the RWST (i.e.; during a refue	ts (RWST's), rveillance R not be perfor lks, because ly basis. The 'ST's) Activi ty water (rac	, which were also equirements for rmed once per 7 radioactive material erefore, the ty will be performed lioactive material)	
8.2.17.1.2	<u>Procedure 1/2-ODC-3.03, Rev 1</u> : Changed Radioactive Effluent Release Report from A Unit 1/2 Technical Specification Amendme	pril 1 to Ma	y 1 as permitted by	
8.2.17.1.3	Procedure 1/2-ODC-3.03, Rev 1: Changed to correct an obvious omission of Channel C Requirements for Flow Rate Measurement I Liquid Waste Containment Drain Line. Thi CR 02-05533. ^(3.2.2.12)	Dperability a Device [FR-1	nd Action Statement [LW-103] on the	
8.2.17.1.4	<u>Procedure 1/2-ODC-3.03, Rev 1</u> : Made edi primary asset numbers of the BVPS-2 Samp on Tables 3.3-13 and 4.3-13 of Control 3.3. the primary Sampler Flowrate Monitor is th monitoring sample flowrate through the Par Flowpath, not the Particulate and Iodine Mo	ble Flowrate 3.10. These e device that ticulate and	Monitors as shown changes clarify that is used for Iodine Sampler	

•

-

Beaver Valley Power Station Fittle: ODCM: Index, Matrix and History of ODCM Changes	Unit: 1/2	1/2-ODC-1.01 Level Of Use:
ODCM: Index, Matrix and History of ODCM Changes	1/2	
		General Skill Reference
	Revision:	Page Number:
•	3	41 of 70
8.2.17.2.1 These changes merely transfers existing storag Technical Specification to the ODCM and cha		
Annual Radioactive Effluent Release Report a	<u> </u>	
Technical Specification Amendments 1A-250		•
change, the ODCM Control for Liquid Storage		▲
enhanced to add ODCM Controls and Surveil		
Unit 1 and Unit 2 RWST's. Therefore, these of		
Technical Specification Amendments) will ma		
effluent control required by 10 CFR 20.1302,		
- 50.36a, and Appendix I to 10 CFR 50. Also, t		· · ·
the accuracy or reliability of effluent dose or a	-	
		1
8.2.18 Change (18) of the BV-1 and 2 ODCM (Effective October	r 2002).	
8.2.18.1 A description of the changes that were implemented	with this	revision are as
follows:		
8.2.18.1.1 Procedure 1/2-ODC-3.03, Rev 2: Added requ	iromont fo	r applicable station
groups notification of pending ODCM change		
$05711.^{(3.2.2.13)}$.0cu 111 CK 09~
	· ·	
8.2.18.2 The justification used for change (18) of the ODCM	is as follo	ows:
8.2.18.2.1 This change is considered editorial in nature,	which exe	mpts the change
from Regulatory Applicability Determination.		
not impact the level of radioactive effluent co		
10CFR20.1302, 40CFR Part 190, 10CFR50.3		
 10CFR50. Also this change will not impact the 	he accurac	y or reliability of
effluent dose or alarm setpoint calculation.	. 2	•
		1
8.2.19 Change (19) of BV-1 and 2 ODCM (Effective November	2002)	
8.2.19.1 A description of the changes that were implemented	l with this	revision are as follows:
8.2.19.1.1 <u>Procedure 1/2-ODC-2.01, Rev 1</u> : Changed T	able 1 1-1:	a and 1 1-1b to add $\frac{1}{2}$
1100000000000000000000000000000000000		
02-06174 (CA-01, CA-13 and CA-14). For in		
to the reactor coolant system in an effort to re		
primary system materials and mitigation of st		
benefits to zinc addition involve preferential		
which, in-turn, reduces plant dose rates. Dev		
Annual Release Activity is delineated in Calc		
83-027. ^(3.2.3.1) Addition of Zn-65 to the source		
the Liquid Effluent Monitor Alarm Setpoints,		· · · · · · · · · · · · · · · · · · ·
conversion factors.	and appre	Print monitor

• •

•• • •

• •

Reave	r Valley Power Station	Procedure Nu	
			1/2-ODC-1.01
tle:		Unit:	Level Of Use: General Skill Reference
DCM. Index Mat-	and History of ODCM Changes	Revision:	Page Number:
	and History of ODCM Changes	3	42 of 70
8.2.19.1.2	<u>Procedure 1/2-ODC-2.01, Rev 1</u> : Table 1.1- remainder of the source term with annual rele	ease values d	
·	Webster Calculation Package No. UR(B)-160).	
8.2.19.1.3	Procedure 1/2-ODC-2.01, Rev 1: Editorial c procedure for update of ODCM references ar Liquid Waste Evaporators are no longer used waste.	nd to add dis	cussion of why
8.2.19.2 The	e justification used for change (19) of the ODCM	A is as follow	ws:
8.2.19.2.1	Addition of Zn-65 to the BV-1 and 2 Liquid update of the BV-1 and 2 Liquid Source Terr correction, and is enveloped by the Regulator performed for BV-1 ECP-02-0410. Based or maintain the level of radioactive effluent con 20.1302, 40 CFR Part 190, 10 CFR 50.36a, a Also, these changes will not impact the accur dose or alarm setpoint calculation.	n is consider ry Applicabi n the above, trol required and Appendi	red a procedure lity Determination these changes will by 10 CFR x I to 10 CFR 50.
•	20) of BV-1 and 2 ODCM (Effective October 2 lescription of the changes that were implemente <u>Procedure 1/2-ODC-2.01, Rev 2</u> : Changed L	d with this r	
	(Attachment D) to indicate the flow path for Unit 1 and Unit 2.	cross conne	ct of LW between
8.2.20.1.2	Procedure 1/2-ODC-2.02, Rev 1: Changed T term for the Unit 1 Containment Vacuum Pu		
	04830 (CA-03) as follows:		
8.2.20.1.3	<u>Procedure 1/2-ODC-3.03, Rev 3</u> : Changed th Monitoring (PMM) in Attachment D Table 3 Specifically, the 2nd PMM for the Reactor B Range Noble Gas Monitors (RM-1VS-110 C FROM "(RM-1VS-107B)" TO "(RM-1VS-1 Also, the 2nd PMM for the Auxiliary Buildin High Range Noble Gas Monitors (RM-1VS- FROM "(RM-1VS-101B)" TO "(RM-1VS-1 Similarly, the 2nd PMM for the Gaseous Wa High Range Noble Gas Monitors (RM-1GW FROM "(RM-1GW-108B)" TO "(RM-1GW	8.3-6 and Tab Building/SLC Ch 7 & Ch 9) 07B, or RM ng Ventilatio 109 Ch 7 & 01B, or RM aste/ Process 7-109 Ch 7 &	ble 4.3-3. CRS Mid & High was changed -1VS-110 Ch 5)". on System Mid & Ch 9) was changed -1VS-109 Ch 5)". Vent System Mid & c Ch 9) was changed

Beave	r Valley Power Station	Procedure N		
			1/2-ODC-1.01	
Titk:		Unit:	Level Of Use: General Skill Referenc	-
ODCM. Index Matrix	and History of ODCM Changes	Revision:	Page Number:	<u> </u>
	and History of ODCM Changes	3	43 of 70	-
8.2.20.1.5	Procedure 1/2-ODC-3.03, Rev 3: Changed Att	achment]	K Table 4.11-2 to	
	add more specific guidance for sampling of Ga	seous Eff	luent Pathways.	
· · · · · · · · · · · · · · · · · · ·	Specifically, this table is generic for Unit 1 &		-	•
	Pathways, but sampling may only need require			Ì
	Effluent Pathways rather than all of the Gaseo			•
	be inferred from the wording in the Table Not		•	,
Contraction of the second	unnecessary sampling, applicability statements		-	•
	delineate which ventilation systems are affected			;
·. · · · · · · · · · · · · · · · · · ·	(f) includes a clarification of how compliance	•		•
	per response to NRC Unresolved Item 50-334		-	•
			•	
8.2.20.2 The	justifications used for change (20) of the ODCM	I are as fo	ollows:	; r
8.2.20.2.1	Procedure 1/2-ODC-2.01, Rev 2: Changing th	diagram	to show the LW	(
0.2.20.201	cross connect between Unit 1 and Unit 2 is no			
	configuration, and is considered a procedure c	_	-	
	procedure of the ODCM already describes the			
	system. Also, the UFSAR's describe the cross	••		
n an an an an an an	this change will maintain the level of radioact			
	10 CFR 20.1302, 40 CFR Part 190, 10 CFR 5	•		
	CFR 50. Also, this change will not impact the	•	••	
	· · · · · · · · · · · · · · · · · · ·	accuracy	of fenality of	
	effluent dose or alarm setpoint calculation.			
8.2.20.2.2	Procedure 1/2-ODC-2.02, Rev 1: The original	source-te	rm calculation for the	
0.2.20.2.2	GW System was based on an operating flow r			
	containment vacuum pumps. The flow rate for			
	Consequently, the source-term was revised pe			
	HHM-87-014 and then transcribed to this pro-		e	
	pumps represent a factor of 15 increase in flow			
• • • • • •	• • • • · · · · ·		-	
	monitor alarm setpoints are unchanged. Spec	•		
	were based on a percentage of Offsite Dose R	•		
	were actually above the range of the instrume	• •		
	substituted. This is also true for the re-calcula			
	scale values are used. In summary, changing			
	procedure correction, and is enveloped by the	· · · · ·	• • • •	
	Determination performed for BV-1 ECP-02-0	,		
	change will maintain the level of radioactive of		÷ . · •	
	CFR 20.1302, 40 CFR Part 190, 10 CFR 50.3			
	50. Also, this change will not impact the accu	-	-	
	dose or alarm setpoint calculation This is a	Correctiv	e Action per CR03-	
	04830-03.			

•

)

.

.....

-

Beave	r Valley Power Station	Procedure Nu	^{mber:} 1/2-ODC-1.01
lic:		Unit:	Level Of Use:
DCM: Index, Matrix	c and History of ODCM Changes	1/2 Revision:	General Skill Reference Page Number: 44 of 70
8.2.20.2.3 -	Procedure 1/2-ODC-3.03, Rev 3: Changing Monitoring (PMM) will prevent unnecessa PMM) when the primary channel for the M Monitor is inoperable. Specifically, IF oth channels are available on that effluent path assumed with those channels as the 2nd PM (ie; obtaining grab gas samples every 12 he a last resort to a complete lack of continuo being available on that effluent pathway. B will maintain the level of radioactive efflue 20.1302, 40 CFR Part 190, 10 CFR 50.36a Also, this change will not impact the accur or alarm setpoint calculation. This is a C	ry grab sampli fid or High Ran her Noble Gas I way, <u>THEN</u> m MM. In summa burs) should or us noble gas m based on the ab ent control require a and Appendia acy or reliabili	ng (ie; the 3rd nge Noble Gas Monitoring nonitoring should be ary, the 3rd PMM aly be performed as nonitoring channels ove, this change uired by 10 CFR x I to 10 CFR 50. ty of effluent dose
8.2.20.2.4	01. <u>Procedure 1/2-ODC-3.03, Rev 3:</u> Changing storage tanks does not affect original plant the original analyses were performed in ac 15.7.3 using the best available data at that also performed in accordance the same NU data was used to determine allowable active the above, this change will maintain the le required by 10 CFR 20.1302, 40 CFR Part Appendix I to 10 CFR 50. Also, this chan reliability of effluent dose or alarm setpoint Action per CR03-07487-05.	accident analy cordance with time. The upd JREG, but curr vity content in e vel of radioacti 190, 10 CFR s ge will not imp	vses. Specifically, NUREG-0800 SRP ated analyses were ent (more accurate) each tank. Based on ive effluent control 50.36a, and pact the accuracy or
8.2.20.2.5	Procedure 1/2-ODC-3.03, Rev 3: Changin add more specific guidance for sampling of considered a simple change. Specifically, unnecessary sampling of unaffected ventil above, this change will maintain the level required by 10 CFR 20.1302, 40 CFR Part Appendix I to 10 CFR 50. Also, this chan reliability of effluent dose or alarm setpoin Corrective Action per CR03-06281-01. - END -	of Gaseous Effl this change me ation pathways of radioactive 190, 10 CFR ge will not imp	uent Pathways is erely prevents 5. Based on the effluent control 50.36a, and pact the accuracy or

•

•

1

Beaver Valley Power Station	1	Procedure Nu	mber: 1/2-ODC-1.01
Title:		Unit: 1/2.	Level Of Use: General Skill Reference
ODCM: Index, Matrix and History of ODCM Changes		Revision:	Page Number: 45 of 70
ATTACHMENT A Page 1 of 6 LIST OF ODCM TABLES			· · ·
		•	•
LIQUID EFFLUENTS Included in Procedure 1/2-ODC-2.01	•		
1.1-1a BV-1 Liquid Source Term	• •	• • •	•
1.1-1b BV-2 Liquid Source Term			
1.2-1a BV-1 Recirculation Times Required Before Sampling C	Of Liq	uid Discl	narge Tanks
1.2-1b BV-2 Recirculation Times Required Before Sampling C	Of Lig	uid Discl	narge Tanks
1.3-1 A _{it} Values For An Adult For The Beaver Valley Site		· · ·	
GASEOUS EFFLUENTS Included in Procedure 1/2-ODC-2.02	÷.,	: .	
2.1-1a BV-1 Radionuclide Mix For Gaseous Effluents		·•. ·	
2.1-1b BV-2 Radionuclide Mix For Gaseous Effluents		·	ананан алар Алар Алар
2.1-2a BV-1 Monitor Detector Efficiencies		•	
2.1-2b BV-2 Monitor Detector Efficiencies	• •		·
2.2-1 Modes Of Gaseous Release From Beaver Valley Site V 20 And 10 CFR 50		For Imple	
2.2-2a BV-1 Radionuclide Mix For Gaseous Effluents	• : ,	, <u>:</u> ,	•
2.2-2b BV-2 Radionuclide Mix For Gaseous Effluents	• • • •,		
2.2-3 - Distances Of Limiting Maximum Individual Receptors Values			ints For Annual X/Q
ANNUAL AVERAGE X/Q Included in Procedure 1/2-ODC-2.02			
2.2-4 BV-1 And 2 Containment Vents (Ground Release)		- 	
2.2-5 BV-1 And 2 Ventilation Vents (Ground Release)			· · · · · · · · · · · · · · · · · · ·
2.2-6 BV-1 And 2 Process Vent (Elevated Release)			•
2.2-7 BV-1 And 2 Turbine Building Vents (Ground Release))		· _ · · · · · · · · · · · · · · · · · ·
2.2-8 BV-2 Decontamination Building Vent (Ground Release	c)		

•

)

- : ;

· _)

• •

	Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill R
ODCM: Ir	ndex, Matrix and History of ODCM Changes	Revision:	Page Number: 46 of 7
	ATTACHMENT A Page 2 of 6 LIST OF ODCM TABLES		
2.2-9	BV-2 Waste Gas Storage Vault Vent (Ground Release)	
2.2-10	BV-2 Condensate Polishing Building (Ground Release	e)	
NOBLE C	GAS DOSE FACTORS AND DOSE PARAMETERS I	ncluded in 1/2-C	DDC-2.02
2.2-11	Dose Factors For Noble Gases And Daughters		
2.2-12	Dose Parameters For Finite Elevated Plumes, Beaver	Valley Site	
<u>P&I DOS</u>	E PARAMETERS Included in 1/2-ODC-2.02		· .
2.2-13	Pit Values For A Child For The Beaver Valley Site		
MODES	OF GASEOUS RELEASES Included in Procedure 1/2-	ODC-2.02	
23-1	Modes Of Gaseous Release Form The Beaver Valley CFR 20 And 10 CFR 50	Site Vents For I	mplementation
<u>P&I ORC</u>	AN DOSE FACTORS Included in 1/2-ODC-2.02		
2.3-2	R Values for Inhalation - Adult		
2.3-3	R Values for Inhalation - Teen		
2.3-4	R Values for Inhalation - Child		
2.3-5	R Values for Inhalation - Infant		
2.3-6	R Values for Ground		
2.3-7	R Values for Vegetation - Adult		
2.3-8	R Values for Vegetation - Teen		
2.3-9	R Values for Vegetation - Child		
2.3-10	R Values for Meat - Adult		
2.3-11	R Values for Meat - Teen		
2.3-12	R Values for Meat - Child		
1		<i>t</i> .	-

Beaver Valley Power Station	Unit:	1/2-ODC-1.01
		Level Of Use:
DCM: Index Matrix and History of ODCM Changes	1/2 Revision:	General Skill Reference Page Number:
ODCM: Index, Matrix and History of ODCM Changes	3	47 of 70
ATTACHMENT A Page 3 of 6 LIST OF ODCM TABLES		
2.3-15 R Values for Cow Milk - Child	; ;	
2.3-16 R Values for Cow Milk - Infant		
2.3-17 R Values for Goat Milk - Adult		
2.3-18 R Values for Goat Milk - Teen		•
2.3-19 R Values for Goat Milk - Child	· · ·	· · ·
2.3-20 R Values for Goat Milk - Infant		
CONTINUOUS RELEASE DEPOSITION PARAMETERS (0-5 Mile	s)Included in	Procedure 1/2-ODC-2.02
2.3-21 BV-1 And 2 Process Vent (Elevated Release)		
2.3-22 BV-1 And 2 Containment Vents (Ground Release)	•	
2.3-23 BV-1 And 2 Ventilation Vents (Ground Release)		
2.3-24 BV-1 And 2 Turbine Building Vents (Ground Release)		
2.3-25 BV-2 Condensate Polishing Building (Ground Release)		
2.3-26 BV-2 Decontamination Building Vent (Ground Release)	÷	
2.3-27 BV-2 Waste Gas Storage Vault Vent (Ground Release)		
CONTINUOUS RELEASE DEPOSITION PARAMETERS (SPEC Procedure 1/2-ODC-2.02	LAL DIST	ANCES) Included in
2.3-28 BV-1 And 2 Process Vent (Elevated Release)	•	• • •
2.3-29 BV-1 And 2 Containment Vents (Ground Release)	• •	••••
2.3-30 BV-1 And 2 Ventilation Vents (Ground Release)		· · · · · · · · · · · · · · · · · · ·
2.3-31 BV-1 And 2 Turbine Building Vents (Ground Release)		
2.3-32 BV-2 Condensate Polishing Building (Ground Release)	· · '	· · ·
2.3-33 BV-2 Decontamination Building Vent (Ground Release)		· · · · · · · · · · · · · · · · · · ·
2.3-34 BV-2 Waste Gas Storage Vault Vent (Ground Release)		-

• . •

• •.

.

Ì

.

.

	Beaver Valley Power Station	Procedure N	umb er: 1/2-ODC-1.01
Title:	J	Unit:	Level Of Use:
ODCM: In	dex, Matrix and History of ODCM Changes	1/2 Revision:	General Skill Reference Page Number: 48 of 70
i	ATTACHMENT A Page 4 of 6	· · · · · · · · · · · · · · · · · · ·	<u> </u>
DAGGID	LIST OF ODCM TABLES		
ODC-2.02	ELEASE DISPERSION PARAMETERS (Special Dista	inces) Include	d in Procedure 1/2-
2.3-35	BV-1 And 2 Containment Vents (Ground Release)		
2.3-36	BV-1 And 2 Ventilation Vents (Ground Release)		
2.3-37	BV-1 And 2 Process Vent (Elevated Release)		-
BATCH R	ELEASE DISPERSION PARAMETERS (0-5 Miles) Inc	cluded in Proc	cedure 1/2-ODC-2.02
2.3-38	BV-1 And 2 Process Vent (Elevated Release)		•
ENVIRON	MENTAL MONITORING Included in Procedure 1/2-0	DC-2.03	
3.0-1	Radiological Environmental Monitoring Program		
DISPERSI	ON CALCULATION Included in Procedure 1/2-ODC-3	.01	
A:1	BV-1 And 2 Release Conditions		
<u>INPUTS T</u>	O COMPUTER CODES Included in Procedure 1/2-OD	<u>C-3.01</u>	
B:1a	Inputs To GALE Code For Generation Of BV-1 Liquid	l Source Term	n Mixes
B:1b	Inputs To SWEC LIQ1BB Code For Generation Of BV	/-2 Liquid So	urce Term Mixes
B:2a	Inputs To SWEC GAS1BB Code For Generation Of B	V-1 Gaseous	Source Term Mixes
B:2b	Inputs To SWEC GAS1BB Code For Generation of B	V-2 Gaseous S	Source Term Mixes
ODCM.C	ONTROLS Included in Procedure 1/2-ODC-3.03		
C:1.1	Operational Modes	•	
C:1.2	Frequency Notation		
C:3.3-6	Radiation Monitoring Instrumentation		
C:4.3-3	Radiation Monitoring Instrumentation Surveillance Re	quirements	
C:3.3-12	Radioactive Liquid Effluent Monitoring Instrumentation	on	-
C:4.3-12	Radioactive Liquid Effluent Monitoring Instrumentation	on Surveilland	ce Requirements
C:3.3-13	Radioactive Gaseous Effluent Monitoring Instrumenta	tion	

·• ·

•

•

. . .

.

;

•

	Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-1.01
Fitle:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: In	dex, Matrix and History of ODCM Changes	Revision:	Page Number: 49 of 70
	ATTACHMENT A Page 5 of 6 LIST OF ODCM TABLES	L <i>t/</i>	<u> </u>
C:4.3-13	Radioactive Gaseous Effluent Monitoring Instrumentation	Surveillan	ce Requirements
C:4.11-1	Radioactive Liquid Waste Sampling And Analysis Program	n	
C:4.11-2	Radioactive Gaseous Waste Sampling And Analysis Progr	am	•
C:3.12-1	Radiological Environmental Monitoring Program	· · · ·	• •
C:3.12-2	Reporting Levels For Radioactivity Concentrations In Envi	ironmenta	I Samples
C:4.12-1	Maximum Values For The Lower Limits Of Detection (LL	D)	· · · · · · · ·
FORMAT	FOR ANNUAL REPORT Included in Procedure 1/2-ODC-	<u>3.03</u>	
E:6.9-1	Environmental Radiological Monitoring Program Summar	У	
ODCM CO	ONTROLS PROCEDURE MATRIX Included in Procedure	1/2-ODC-	<u>1.01</u>
F:1a	BV-1 Radiation Monitoring Instrumentation Surveillance		
· F:1b	BV-2 Radiation Monitoring Instrumentation Surveillance		
F:2a	BV-1 Liquid Effluent Monitor Surveillances		:
F:2b	BV-2 Liquid Effluent Monitor Surveillances		
F:3a	BV-1 Gaseous Effluent Monitor Surveillances		
F:3b	BV-2 Gaseous Effluent Monitor Surveillances		:
F:4	BV-1 and 2 Liquid Effluent Concentration Surveillances		
F:5	BV-1 and 2 Liquid Effluent Dose Surveillances		
F:6	BV-1 and 2 Liquid Effluent Treatment Surveillances		
F:7	BV-1 and 2 Liquid Storage Tank Activity Limit Surveillar	nces	
F:8	BV-1 and 2 Gaseous Effluent Dose Surveillances		
F:9	BV-1 and 2 Gaseous Effluent Air Dose Surveillances		
F:10	BV-1 and 2 Gaseous Effluent Particulate and Iodine Dose	Surveillar	nces
F:11	BV-1 and 2 Gaseous Effluent Treatment Surveillances	•	•

. •

)

1

• :

. . .

. . **.**

.

.

. ..

	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-1.01
Title:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: I	ndex, Matrix and History of ODCM Changes	Revision:	Page Number: 50 of 70
	ATTACHMENT A Page 6 of 6 LIST OF ODCM TABLES	A- <u>-</u><u>-</u>-<u>-</u><u>-</u>A<u>_</u>	
F:12a	BV-1 Gaseous Storage Tank Activity Limit Surveillance	es	
F:12a	BV-2 Gaseous Storage Tank Activity Limit Surveillance	es	
F:13	BV-1 and 2 Total Dose Surveillances		
F:14	BV-1 and 2 REMP Surveillances		-
F:15	BV-1 and 2 Land Use Census Surveillances		
F:16	BV-1 and 2 Interlaboratory Comparison Program		

·

•

•••

Beaver Valley Power Station	Procedure Num	1ber: /2-ODC-1.01
Title: ODCM: Index, Matrix and History of ODCM Changes	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Referen Page Number:
ATTACHMENT B Page 1 of 1 LIST OF ODCM FIGURES	<u> </u>	<u>51 of 70</u>
LIQUID EFFLUENTS Included in Procedure 1/2-ODC-2.01		
1.4-1 BV-1 Liquid Radwaste System		
1.4-2 BV-2 Liquid Radwaste System		· · · · · · · · · · · · · · · · · · ·
1.4-3 BV-1 and 2 Liquid Effluent Release Points	•	
5-1 Site Boundary For Liquid Effluents	:	· · · · · · · · · · · · · · · · · · ·
GASEOUS EFFLUENTS Included in Procedure 1/2-ODC-2.02	د المربية العربية. مراجع	
2.4-1 BV-1 and 2 Gaseous Radwaste System	، ۰۰ ، ۱۰	- 1 - 1
2.4-2 BV-1 and 2 Gaseous Effluent Release Points		
5-1 Site Boundary For Gaseous Effluents	. * • • • •	• • •
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM	I Included in	Procedure 1/2-
ODC-2.03		
3.0-1 Air Sampling Locations	•	-
3.0-2 TLD Locations	•	, ,
3.0-3 Shoreline Sediment, Surface Water, And Drinking Water	Sampling L	ocations
3.0-4 · Milk Sampling Locations		
3.0-5 Foodcrop Sampling Locations		
3.0-6 Fish Sampling Locations		•
		:

•• •

.

.

.

• • • •

į

• • • •

•••

• •

~

· · · · ·

2.

•

	Beaver Valley Power S	Station	Procedure No	· · · ·		
				1/2-ODC-1.01		
itle			Unit: 1/2	Level Of Use: General Skill Reference		
		N 1	Revision:	Page Number:		
DCM: Inde	ex, Matrix and History of ODCM C	hanges	3	52 of 70		
h <u>_</u>	ATT	ACHMENT C				
	P	age 1 of 19				
		S PROCEDURE MAT	FRIX			
				_ ·		
TABLE F:1a	BV-1 RADIATION MONITORI	NG INSTRUMENTION SUR	VEILLANCE	5		
ODCM Control	3.3.3.1: Radiation Monitoring Channels I	n 1/2-ODC-3.03, Table 3.3-6	OPERABLE			
APPLICABILIT	Y: Modes 1 thru 4			······································		
ODCM SR	DESCRIPTION	P	ROCEDURE			
4.3.3.1	Test Monitors at Table 4.3-3 Frequency					
4.3.3.1.1	Noble Gas Effluent Monitors -	NOTE: Actions for INOP	ERABLE Mo	nitors are documented		
	SPINGS	in the Operations Shift L				
4.3.3.1.1.a	Supplementary Leak Collection and	1MSP-43.59-I: Channel Ca	alibration	• • • •		
	Release System	10M-54.3 L5 Log Item 20		neck		
100111	(RM-1VS-110 CH7 & CH9)	10ST-43.07: Channel Fur				
4.3.3.1.1.b	Auxiliary Building Ventilation System	1MSP-43.60-1: Channel C		, i		
	(RM-1VS-109 CH7 & CH9)	10M-54.3 L5 Log Item 20 10ST-43.07: Channel Fur	4: Unannei Ui Ictional Test	1eck		
4.3.3.1.1.c	Process Vent System (RM-1GW-109	1MSP-43.58-I: Channel C		······································		
	CH7 & 9)	10M-54.3 L5 Log Item 20		neck		
		10ST-43.07: Channel Fur				
4.3.3.1.2	Noble Gas Steam Effluent	NOTE: Actions for INOP in the Operations Shift L				
	Monitors	in the Operations Shift L	.ogs, and the	onr onni Lugs.		
433120	Atmospheric Steam Dump Valve and	1MSP-43 62-1- BM-1MS-1	00A Channel	d 1MSP-43.62-I: RM-1MS-100A Channel Calibration 1MSP-43.63-I: RM-1MS-100B Channel Calibration		
4.3.3.1.2.ci v.1.2a	Atmospheric Steam Dump Valve and Code Safety Valve Discharge					
4.3.3.1.2.ci v.1.2a	Code Safety Valve Discharge		00B Channel	Calibration		
		1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 10M-54.3 L5 Log Item 07	00B Channel 00C Channel 8: RM-1MS-1	Calibration Calibration 00A Channel Check		
	Code Safety Valve Discharge	1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 1OM-54.3 L5 Log Item 07 1OM-54.3 L5 Log tem 079	00B Channel 00C Channel 8: RM-1MS-1 9: RM-1MS-10	Calibration Calibration 00A Channel Check 00B Channel Check		
	Code Safety Valve Discharge	1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 1OM-54.3 L5 Log Item 07 1OM-54.3 L5 Log tem 079 1OM-54.3 L5 Log Item 10	00B Channel 00C Channel 8: RM-1MS-1 9: RM-1MS-10 3: RM-1MS-1	Calibration Calibration 00A Channel Check 00B Channel Check		
v.1.2a	Code Safety Valve Discharge (RM-1MS-100A, B, C)	1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 1OM-54.3 L5 Log Item 07 1OM-54.3 L5 Log tem 079 1OM-54.3 L5 Log Item 10 1OST-43.05: Channel Fur	00B Channel 00C Channel 8: RM-1MS-1 9: RM-1MS-10 3: RM-1MS-1 10ctional Test	Calibration Calibration 00A Channel Check 00B Channel Check		
	Code Safety Valve Discharge (RM-1MS-100A, B, C) Auxiliary Feedwater Pump Turbine	1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 1OM-54.3 L5 Log Item 07 1OM-54.3 L5 Log Item 079 1OM-54.3 L5 Log Item 10 1OST-43.05: Channel Fur 1MSP-43.65-I: Channel C	00B Channel 00C Channel 8: RM-1MS-1 0: RM-1MS-10 3: RM-1MS-1 nctional Test alibration	Calibration Calibration 00A Channel Check 00B Channel Check 00C Channel Check		
v.1.2a	Code Safety Valve Discharge (RM-1MS-100A, B, C)	1MSP-43.63-I: RM-1MS-1 1MSP-43.64-I: RM-1MS-1 1OM-54.3 L5 Log Item 07 1OM-54.3 L5 Log tem 079 1OM-54.3 L5 Log Item 10 1OST-43.05: Channel Fur	00B Channel 00C Channel 8: RM-1MS-10 9: RM-1MS-10 3: RM-1MS-1 10 10 10 10 10 10 10 10 10 10 10 10 10	Calibration Calibration 00A Channel Check 00B Channel Check 00C Channel Check		

Beaver Valley Power Station					1/2-ODC-1.0		
Title: ODCM: Inc	lex, Matrix and History of ODCM (Changes →		Unit: <u>1/2</u> Revision: 3	Level Of Use: General Skil Page Number: 53 0		
TABLE F:1b	-		URE MAT		6		
ODCM Contro APPLICABIL	<u>ol 3.3.3.1</u> : Radiation Monitoring Channels I <u>TY</u> : Modes 1 thru 4	n 1/2-ODC-3.03	, Table 3.3-6	OPERABLE	· · · · ·	•	
ODCM SR	DESCRIPTION		Pl	ROCEDURE	····		
4.3.3.1	Test Monitors at Table 4.3-3 Frequency		:				
4.3.3.1.1	Noble Gas Effluent Monitors				nitors are docu RP Shift Logs		
4.3.3.1.2. c.i.1.1.a	Supplementary Leak Collection and Release System (2HVS-RQ109C & D)	2MSP-43.33-I 2OM-54.3 Log 2OST-43.08:	Channel Ca	libration 133: Channe	,	• • • • • • • • • • • • • • • • • • •	
t		2031-43.08.	Julannet r un			·*··· · ·	
<u></u>							
					•		
				•	•	· · · · ·	
	د می باد. هر ۱۹۹۹ زمان می از این			÷.,	1	••	
					:		
··· ·· ···			• •		, , ,		
			,		•. •		
•				· •	· ·	• •	
		·			•		
			·				
·			•				
			· ·	•	· · ·	.*	
				1 - A	,		
			۰ ۱۰		· · · ·	· • · ·	
· +			-			-	
		eters States					
	· · · · · · · · · · · · · · · · · · ·				<u>.</u> '		
			•		· · ·	•	
				•	•		
- 、		in a transformation 1999 - Al Contractor and Astronomy and Astronomy Al Contractor	-, .				
			*	·. · ·		`:	
					- : - :		
		na an Taona		· · · ·		• •	
		.	· · · ··		-	• • •	
				· · •	, · · ,	•	
		• •					

. ·

•

.

.

.

• • •

• •

.

. . . .

• -

	Beaver Valley Power S	Station	Procedure Nu	1/2-ODC-1.01
e:		· · · · · · · · · · · · · · · · · · ·	Unit:	Level Of Use:
		; ;	<u>1/2</u> Revision:	General Skill Reference Page Number:
OCM: Inde	ex, Matrix and History of ODCM (Changes	Revisiou.	54 of 70
	ATT	ACHMENT C	:	······································
•	Pa	age 3 of 19	÷*	
	ODCM CONTROI	S PROCEDURE MAT	TRIX	
BLE F:2a		INT MONITOR SURVEILLA		
DCM Control PPI ICABILIT	<u>3.3.3.9</u> : Liquid Effluent Monitors In 1/2-O Y: During Releases Through The Flow Pa	DC-3.03, Table 3.3-12 OPE ath	RABLE	
ODCM SR	DESCRIPTION		ROCEDURE	
.3.3.9	Test Monitors at Table 4.3-12 Frequency		·	
.3.3.9.1	Monitors Providing Alarm and Automatic Termination	NOTE: Actions for INOPER Operations Shift Logs, and		
.3.3.9.1.a	Liquid Radwaste Effluent Line	1MSP-43.18-I: Channel Calib	ration	
	(RM-1LW-104)	10M-54.3 L5 Log: Channel C 1/20M-17.4A.D: Source Chec		
		10ST-43.09: Channel Function	nal Test	· ,
.3.3.9.1.b	Liquid Waste Contaminated Drain Line	1/2-ADM-1611.F03: Channel 1MSP-43.23-I: Channel Calib	ration	<u>n</u>
	(RM-1LW-116)	10M-54.3 L5 Log: Channel C 1/20M-17.4A.D: Source Chee	heck	· · · · ·
		10ST-43.09: Channel Function		
.3.3.9.1.c	Aurilian Food Dump Day Dails Marilan	1/2-ADM-1611.F03: Channel 1MSP-43.70-I: Channel Calib)
.3.3.9.1.0	Auxiliary Feed Pump Bay Drain Monitor (RM-1DA-100)	10M-54.3 L5 Log: Channel C		
		10M-54.3 L5 Log: Source Ch		
		10ST-43.09: Channel Function 1/2-ADM-1611.F03: Channel		o) .
1.3.3.9.2	Monitors Providing Alarm, but Not Prividing Auto Termination	NOTE: Actions for INOPER Operations Shift Logs, and		
.3.3.9.2.a	Component Cooling - Recirculation	1MSP-43.10-I: Channel Calib	ration	<u>. </u>
•	Spray Hx River Water Monitor (RM-1RW-100)	10M-54.3 L5 Log: Channel C 10ST-43.09: Channel Function		
	(1OST-43.09A: Source Check		۰.
1.3.3.9.3	Flow Rate Measurement Devices	1/2-ADM-1611.F03: Channel NOTE: Actions for INOPER		
	-	Operations Shift Logs, 1/2-	HPP-3.06.005,	
1.3.3.9.3a,b	Liquid Radwaste Effluent Lines 3a: (FR-1LW-104 for RM-1LW-104)	1MSP-17.05-1: Channel Calib 1MSP-17.06-1: F-LW-104-1 C	ration (3b) bannel Calibrat	ion (3a)
••	*3b: (FR-1LW-103 for RM-1LW-116)	1MSP-17.07-I: F-LW-104-2 C	hannel Calibrat	ion (3a)
		1MSP-17.08-I: F-LW-104-1 0 1MSP-17.09-I: F-LW-104-2 0		
		1MSP-17.10-1: F-LW-103 Ch	annel Functiona	l Test (3b)
		10M-54.3 L5 Log: FR-LW-10 10M-54.3 L5 Log: FR-LW-10		
		10M-54.3 L5 Log: FR-LW-10	4-2 Channel Ch	neck (3a)
4.3.3.9.3.c	Cooling Tower Blowdown Line (FT-1CW-101)	1MSP-31.04-I: F-CW-101 Ch 1MSP-31.05-I: F-CW-101 Ch		
÷	(FT-1CW-101-1)	1MSP-31.06-1: F-CW-101-1 (Channel Calibra	tion
	1	1MSP-31.07-1: F-CW-101-1 (10M-54.3 L5 Log: FT-CW-10		
10004	Tools I make a direction D. Soon	10M-54.3 L5 Log: FT-CW-10	1-1 Channel Cl	heck
4.3.3.9.4	Tank Level Indicating Devices	NOTE: Actions for INOPER Operations Shift Logs		s are documented in the
4.3.3.9.4.a	Primary Water Storage Tank	1MSP-8.01-1: L-PG115A Cha		
	(LI-1PG-115A for 1BR-TK-6A)	1MSP-8.03-1: L-PG115A Cha 10M-54.3 L5 Log: Channel C		-
4.3.3.9.4.b	Primary Water Storage Tank	1MSP-8.02-1: L-PG-115B Ch	annel Functiona	al Test
	(LI-1PG-115B for 1BR-TK-6B)	1MSP-8.04-I: L-PG-115B Ch 10M-54.3 L5 Log: Channel C		
4.3.3.9.4.c	Steam Generator Drain Tank	1MSP-17.01-I; L-LW110 Cha	Innel Functional	Test
	(LI-1LW-110 for 1LW-TK-7A)	1MSP-17.03-I: L-LW110 Cha 10M-54.3 L5 Log: Channel 0		
4.3.3.9.4.d	Steam Generator Drain Tank	1MSP-17.02-I; L-LW111 Cha	annel Functiona	I Test
-	(LI-1LW-111 for 1LW-TK-7B)	1MSP-17.04-I: L-LW111 Cha	nnel Calibratio	n .

•

· ·

•••

.

. .

• • • • •

	Beaver Valley Power S	Station	Procedure Nu	
itle:			Unit:	1/2-ODC-1.01 Level Of Use:
itic. •			1/2	General Skill Re
DCM: Inde	ex, Matrix and History of ODCM (Changes	Revision:	Page Number:
		······································	3	55 of 70
	•	ACHMENT C age 4 of 19		
		LS PROCEDURE MA	Γριγ	
	BV-2 LIQUID EFFLUE	ENT MONITOR SURVEILLA	NCES	
TABLE F:2b				÷ ,
	<u>3.3.3.9</u> : Liquid Effluent Monitors In 1/2-0 Y: During Releases Through The Flow Pa		RABLE	
			۰	
ODCM SR	DESCRIPTION	P	ROCEDURE	· · · · · · · · · · · · · · · · · · ·
4.3.3.9	Test Monitors at Table 4.3-12 Frequency			
4.3.3.9.1	Monitors Providing Alarm and	NOTE: Actions for INOP		
4.3.3.9.1.a	Automatic Termination	in the Operations Shift L 1/2-ADM-1611.F04: Chann		
4.0.0.3.1.8	Monitor	1/2-HPP-3.06.005.F01: So	ource Check	- u h)
	(2SGC-RQ100)	2MSP-43.39-I: Channel C		• • • •
		1/20M-17.4A.C: Source C 20M-54.3 L5 Log: Channe		1
		20M-25.4.L: Source Chec 20M-25.4.N: Source Chec		
	[1] Although A. Martin and M. Ma Martin and M. Martin and Martin and M. Martin and	20M-25.4.N. Source Cried 20ST-43.03: Channel Fur		
4.3.3.9.2	Flow Rate Measurement Devices	NOTE: Actions for INOP		
• • •		In the Operations Logs, Logs.	1/2-HPP-3.06	.005, and the RP SI
4.3.3.9.2.a	Liquid Radwaste Effluent	2MSP-25.01-1: 2SGC-P26		Ch Functional Test
•	(2SGC-FIS100)	2MSP-43.39-1: Channel C 2OM-54.3 L5 Log L5: Cha		
4.3.3.9.2.b	Cooling Tower Blowdown Line	2MSP-31.04-I: Channel C	alibration	
	(2CWS-FT101)	2MSP-31.05-I: Channel F 2OM-54.3 L5 Log: Channel		
		· · · ·		. •
			, , , , , , , , , , , , , , , , , , ,	
			• .	
			:	
	(2) Constructions of the configuration of the construction of		•	•
			•	
• • • • •			•	
• • • • •			•	
• • • • •			•	
• • • • •			•	
• • • • •			•	
• • • • •				
• • • • •				1 .
• • • • •				;
• • • • •				
• • • • •				
• • • • •				· · · · · · · · · · · · · · · · · · ·
• • • • •				· · · · · · · · · · · · · · · · · · ·
• • • • •				· · · · · · · · · · · · · · · · · · ·

..

. .

. .

•

•

.

103

ł	Beaver Valley Power S	Station	Procedure Nu	
			Unit:	1/2-ODC-1.01 Level Of Use:
· · ·			1/2	General Skill Referen
OCM: Index	, Matrix and History of ODCM C	Changes	Revision:	Page Number: 56 of 70
	ATTA	ACHMENT C		
		age 5 of 19		
	ODCM CONTROL	S PROCEDURE MAT	RIX	
	BV-1 GASEOUS EFFLU	JENT MONITOR SURVEILL	ANCES	
BLE F:3a				
DCM Control 3	3.3.3.10: Gaseous Effluent Monitors In 1/		PERABLE	
PLICABILITY	: During Releases Through The Flow Pa	iths		
ODCM SR	DESCRIPTION	· P	ROCEDURE	
4.3.3.10	Test Monitors at Table 4.3-13			•
4.3.3.10.1	Frequency Gaseous Waste / Process Vent	NOTE: Actions for INOPI	ERABLE mor	nitors are documented
	System	In the Operations Shift L	ogs, 1/2-HPP	-3.06.006, and the RP
4.3.3.10.1.a	Noble Gas Activity Monitor	Shift Logs. 1MSP-43.22-I: Channel C	alibration	
	Pri: (RM-1GW-108B)	10M-19.4.E, H: Channel (Check	
	Alt: (RM-1GW-109 Ch 5): for continuous releases only, not	10M-19.4.E, H: Source Cl 1/2-OM-19.4A.D: Source (
	an alternate for batch releases	1/2-OM-19.4A.D: Channel Check		
		10M-54.3 L5 Log: RM-1G 10M-54.3 L5 Log: RM-1G		
•	•••	10ST-43.09: Channel Fun	ctional Test	
4.3.3.10.1.b	Particulate & lodine Sampler	1/2-ADM-1611.F03: Chan 1/2-ADM-1611.F03: Chan		ick-up)
1.0.0.10.1.0	Pri: Filter Paper and Charcoal	- 1/2-ADM-1011,1 00, Onan	ici Olicck	
	Cartridge for (RM-1GW-109) Alt: Filter Paper and Charcoal	:		
	Cartridge for (RM-1GW-110)			
1.3.3.10.1.c	System Effluent Flow Rate Measuring Device	1MSP-19.05-I: Channel Fi 1MSP-19.06-I: Channel C		
	Pri: (FR-1GW-108)	10M-54.3 L5 Log: Channe	el Check	
4.3.3.10.1.d	Alt: (RM-1GW-109 Ch 10) Sampler Flow Rate Measuring	1/2-ADM-1611.F03: Chan 1MSP-43.21-I: Channel C		ack-up)
1.0.0.10.1.0	Device	1MSP-43.71-I: Channel F	unctional Test	t (Rotometer)
	Pri: (RM-1GŴ-109 Ch 15) Alt: (Rotometer: FM-1GW-101 and	10M 54.3 L5 Log L5: Cha 10ST-43.07: Channel Fur		
	Vacuum Gauge: PI-1GW-13 for	10ST-43.11: Channel Fur	nctional Test	
122100	RM-1GW-110) 135	1/2-ADM-1611.F03: Chan NOTE: Actions for INOP		
4.3.3.10.2	Auxiliary Building Ventilation System (Ventilation Vent)	in the Operations Shift L		
		Shift Logs		• • • • • • • • • • • • • • • • • • •
4.3.3.10:2.a	Noble Gas Activity Monitor Pri: (RM-1VS-101B)	1MSP-43.13-1: Channel C 10M-54.3 L5 Log: RM-1V		nel Check
	Alt: (RM-1VS-109 Ch 5)	10M-54.3 L5 Log: RM-1V	S-109 Chann	el Check
		10ST-43.07A: RM-1VS-1 10ST-43.09: Channel Fu		unctional Test
		10ST-43.09A: Source Ch	eck	
4.3.3.10.2.b	Particulate & lodine Sampler	1/2-ADM-1611.F03: Chan 1/2-ADM-1611.F03: Chan		ack-up)
7.J.J. IV.Z.V	Pri: Filter Paper and Charcoal	112-00 WE TO TI. 100. Oliali		,
	Cartridge for (RM-1VS-109)			
	Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-111)			
4.3.3.10.2.c	System Effluent Flow Rate	1MSP-44.07-I: Channel F		t
	Measuring Device Pri: (FR-1VS-101)	1MSP-44.08-I: Channel C 10M-54.3 L5 Log: Chann		-
		I Tom one co cogi onam		

...

.

.

.

. -

.

:

Beaver Valley Power Station 1/2-ODC-1.01 iule: Unit: Level Of Use: DDCM: Index, Matrix and History of ODCM Changes 1/2 General Skill Reference DDCM: Index, Matrix and History of ODCM Changes Revision: Page Number: ATTACHMENT C 3 57 of 70 Page 6 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS EFFLUENT MONITOR SURVEILLANCES Continued		·				
itie: Uit: Level Of Use: 1/2. Level Of Use: 1/2. General Skill Reference DDCM: Index, Matrix and History of ODCM Changes ATTACHMENT C Page 6 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS EFFLUENT MONTOR SURVEILLANCES Confined Control 3.3.3 10; Gaseous Effluent Monitors In 12-ODC-3.03 Table 3.3-13 OPERABLE APPLICABILITY: During Releases Through The Flow Paths. Continued Calibration Fire: (MM-1VS-102 Channel Check 105-143.07; Ch	E	Beaver Valley Power S	Station	Procedure Nur		
DDCM: Index, Matrix and History of ODCM Changes Feedator: Page Number: ATTACHMENT C Page 6 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS EFFLUENT MONTOR SURVEILLANCES Continued Continued TABLE F:3a ODCM Control 3.3.2.10: Gaseous Effluent Montors In 1/2-ODC-3.03 Table 3.3-13 OPERABLE APPLICABILITY: During Releases Through The Flow Paths ODCM SR: DESCRIPTION PESCRIPTION PESCRIPTION ODCM SR: AUX: ODESCRIPTION PESCRIPTION PESCREDENT MONTOR DESCRIPTION	litle:			Unit:	Level Of Use:	
JCCM. Index, Madrix and History of ODCM Clarings 3 57 of 70 ATTACHMENT C Page 6 of 19 ODCM CONTROLS PROCEDURE MATRIX BUC ADDITION PROCEDURE MATRIX BUC ADDITION DOCM CONTROLS PROCEDURE MATRIX BUC ADDITION PROCEDURE MATRIX DOCM Sector 10 3.3.3.10: Gaseous Effluent Montrors In 1/2-ODC-3.03 Table 3.3-13 OPERABLE ODCM SR. DESCRIPTION PROCEDURE Address Through The Flow Paths ODCM SR. DESCRIPTION PROCEDURE Address Through The Flow Paths ODCM SR. DESCRIPTION PROCEDURE Address Through The Flow Paths ODCM SR. DESCRIPTION PROCEDURE Address Channel Calibration TOM 54.03 L Log: Channel Functional Test 1005-43.03: Channel Functional Test 100-43.03 L Channel Functional Test 100-43.3 L Channel Functional Test 100-43.3 L Channel Functional Test 100-43.3 L Channel Functional Test <td co<="" td=""><td></td><td></td><td></td><td></td><td></td></td>	<td></td> <td></td> <td></td> <td></td> <td></td>					
Page 6 of 19 ODCM CONTROLS PROCEDURE MATRIX BUILDENT MONITOR SURVEILLANCES Continued TABLE F:33 ODCM Control 3.3.3.10: Gaseous Effluent Monitors In 1/2-ODC-3.03 Table 3.3-13 OPERABLE OPCM SR. DESCRIPTION PROCEDURE OPCM SR. DESCRIPTION PROCEDURE OPCM SR. DESCRIPTION PROCEDURE AND ESCRIPTION AND ESCRIPTION AND ESCRIPTION AND ESCRIPTION AND ESCRIPTION AND ESCRIPTION <td co<="" td=""><td>DUCM: Index</td><td>, Matrix and History of ODCM C</td><td>_nanges</td><td>3</td><td></td></td>	<td>DUCM: Index</td> <td>, Matrix and History of ODCM C</td> <td>_nanges</td> <td>3</td> <td></td>	DUCM: Index	, Matrix and History of ODCM C	_nanges	3	
ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS EFFLUENT MONITOR SURVEILLANCES Continued CONTROL SURVEILLANCES Continued TABLE F:33 ODCM Control 33.3.10: Gaseous Effluent Monitors In 1/2-ODC-3.03 Table 3.3-13 OPERABLE APPLICABILITY: During Releases Through The Flow Paths ODCM SR DESCRIPTION PROCEDURE 4.3.3.10.2.d Sampler Flow Rate Measuring Device 1MSP-44.07-1: Channel Functional Test 1MSP-44.07-1: Channel Functional Test 10ST-43.07: Anone Functional Test 10ST-43.07: Channel Check (Back-up) 4.3.3.10.3.d Particulate & Iodine Sampler Pri: (FR-IVS-112) A1t: (FR-IVS-112) 1MSP-44.094: Channel Calibration 1MSP-43.104: Channel Calibration 1MSP-43.105: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Pri: (RM-IVS-112) 1MSP-44.094: Channel Calibration 1		•	•			
BY-1 GASEOUS EFFLUENT MONITOR SURVEILLANCES Continued Continued Continued Continued Continued Continued DOCM Control 3.3.310: Gaseous Effluent Monitors in 1/2-ODC-3.03 Table 3.3-13 OPERABLE PROCEDURE ACADMENTION PROCEDURE ACADMENTION PROCEDURE 4.3.3.10.2.d Sampler Flow Rate Measuring Device PROCEDURE ACADMENTION PROCEDURE 4.3.3.10.2.d IMSP-44.07-I: Channel Functional Test PROCEDURE 4.3.3.10.3.d RX Containment / SLCRS Notifi Logs. ACX Containment / SLCRS IMSP-44.02-I: Channel Check (Back-up) 4.3.3.10.3.a Notifi Logs. ALX Containment / SLCRS IMSP-44.02-I: Channel Check ALX Containment / SLCRS IMSP-44.02-I: Channel Check ALX Containment / SLCRS IMSP-44.02-I: Channel Check ALX Containment / SLCRS			0	TDIV	:	
Continued Continued ODCM Control 3.3.3.10: Gaseous Effluent Monitors In 1/2-ODC-3.03 Table 3.3-13 OPERABLE APPLICABILITY: During Releases Through The Flow Paths ODCM SR DESCRIPTION PROCEDURE ASampler Flow Rate Measuring Device IMSP-44.07-I: Channel Functional Test 1MSP-44.08-I: Channel Calibration Pri: (RM-1VS-109 Ch 15) 1005T-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test 12-ADM-1611.F03: Channel Check (Ack-up) 4.3.3.10.3 Rx Containment / SLCRS NOTE: Actions for INOPERABLE monitors are documented In the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-43.20-I: Channel Calibration 1.MSP-43.20-I: Channel Calibration IMSP-43.20-I: Channel Check (Ack-up) 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-43.20-I: Channel Check (Back-up) 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-43.20-I: Channel Check (Back-up) 4.3.3.10.3.a Particulate & Iodine Sampler IMSP-43.20-I: Channel Check (Back-up) 4.3.3.10.3.a Particulate & Iodine Sampler IMSP-44.09-I: Channel Check (Back-up) 4.3.3.10.3.a Particulate & Iodine Sampler IMSP-43.10-I: Channel Check (Back-up) <tr< td=""><td></td><td>ODCM CONTROL</td><td>S PROCEDURE MA</td><td>IKIX</td><td></td></tr<>		ODCM CONTROL	S PROCEDURE MA	IKIX		
TABLE F:33 ODCM Control 3.3.10: Gaseous Effluent Monitors In 1/2-ODC-3.03 Table 3.3.13 OPERABLE APPLICABILITY: During Releases Through The Flow Paths ODCM SR DESCRIPTION PROCEDURE 4.3.3.10.2.d Sampler Flow Rate Measuring Device IMSP-44.07-1: Channel Functional Test IMSP-44.08: Channel Chack Test IMSP-44.09: Channel Functional Test IMSP-44.09: Channel Functional Test IOST-43.07: Channel Functional Test IOST-43.07: Channel Chack (Back-up) 4.3.3.10.3 Rx Containment / SLCRS (Elevated Release) NOTE: Actions for INOPERABLE monitors are documented In the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-44.09-1: Channel Chack (Back-up) 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-43.20-1: Channel Chack (Back-up) 4.3.3.10.3.a Noble Gas Activity Monitor IMSP-43.20-1: Channel Chack (Back-up) 4.3.3.10.3.b Particulate & Iodine Sampler IMSP-43.20-1: Channel Chack (Back-up) 4.3.3.10.3.b Particulate & Iodine Sampler IZ-ADM-1611.F03: Channel Functional Test IOST-43.09: Channel Functional Test 4.3.3.10.3.b Particulate & Iodine Sampler IZ-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Effluent Flow Rate Measuring Device IMSP-44.09-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Folw Rate Measuring Device				LANCES		
APPLICABILITY: During Releases Through The Flow Paths PROCEDURE 4.3.3.10.2.d Sampler Flow Rate Measuring Device IMSP-44.07-1: Channel Functional Test IMSP-44.08-1: Channel Chalbration 10MS4.03 L5 Log: Channel Check (Back-up) 4.3.3.10.3.d Rx Containment / SLCRS (Fir RM-1VS-111) IMSP-44.08-1: Channel Functional Test IOST-43.07: Channel Functional Test IOST-43.07: Channel Functional Test IOST-43.07: Channel Check (Back-up) 4.3.3.10.3.d Rx Containment / SLCRS (Elevated Release) NOTE: Actions for INOPERABLE monitors are documented In the Operations Shift Logs, 12-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor Pri: (RM-1VS-107B) Alt: (RM-1VS-107B) IOM-54.3.15 Log: RM-1VS-107B Channel Check 10M-54.3.15 Log: RM-1VS-107B Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Annel Functional Test 10ST-43.09: Annel Functional Test 10ST-43.09: Annel Functional Test 10ST-43.09: Annel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Check 12-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.b Particulate & Iodins Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-110) Alt: RM-1VS-110 Ch 10) IMSP-44.09-1: Channel Calibration 1MSP-44.19: Channel Check (Back-up) 4.3.3.10.3.d System Effluent Flow Rate Measuring Device Pri: (FM-1VS-112) IMSP-44.09-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device IMSP-43.19: Channel Check (Back-up)	TABLE F:3a					
4.3.3.10.2.d Sampler Flow Rate Measuring Device 1MSP-44.07-I: Channel Functional Test 1MSP-44.08-I: Channel Calibration 9.1.1 Prit: (FM-1VS-109 Ch 15) Att: (Rotometer: FM-1VS-102 and Vacuum Gauge: PI-1VS-559 1OST-43.07: Channel Check 10ST-43.07: Channel Check (Back-up) 4.3.3.10.3 Rx Containment / SLCRS (Elevated Release) NOTE: Actions for INOPERABLE monitors are documented in the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor Pri: (RM-1VS-107B) Att: (RM-1VS-107B) 1MSP-43.20-I: Channel Calibration 10M-54.3 LS Log: RM-1VS-107 Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Activation Check 4.3.3.10.3.b Particulate & Iodine Sampler Pri: Filter Paper and Charcoal Cantidge for (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Elluent Flow Rate Measuring Device: Pri: (FR-1VS-112) 1MSP-44.09-I: Channel Calibration MSP-43.27-21: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 10) 1MSP-44.09-I: Channel Calibration MSP-43.27-21: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 15) Att: (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 15) Att: (RM-1VS-110 Ch 15)				JPERADLE		
4.3.3.10.2.d Sampler Flow Rate Measuring Device 1MSP-44.07-I: Channel Functional Test 1MSP-44.08-I: Channel Calibration 9.1.1 Prit: (FM-1VS-109 Ch 15) Att: (Rotometer: FM-1VS-102 and Vacuum Gauge: PI-1VS-559 1OST-43.07: Channel Check 10ST-43.07: Channel Check (Back-up) 4.3.3.10.3 Rx Containment / SLCRS (Elevated Release) NOTE: Actions for INOPERABLE monitors are documented in the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor Pri: (RM-1VS-107B) Att: (RM-1VS-107B) 1MSP-43.20-I: Channel Calibration 10M-54.3 LS Log: RM-1VS-107 Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Activation Check 4.3.3.10.3.b Particulate & Iodine Sampler Pri: Filter Paper and Charcoal Cantidge for (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Elluent Flow Rate Measuring Device: Pri: (FR-1VS-112) 1MSP-44.09-I: Channel Calibration MSP-43.27-21: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 10) 1MSP-44.09-I: Channel Calibration MSP-43.27-21: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 15) Att: (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: Pri: (RM-1VS-110 Ch 15) Att: (RM-1VS-110 Ch 15)	ODCM SR	DESCRIPTION		PROCEDURE		
Pri: (RM-IVS-109 Ch 15) Alt: (Rhometer, FM-IVS-102 and Vacuum Gauge: PI-IVS-659 for RM-IVS-111) 100543.07: Channel Functional Test 103T-43.07: Channel Functional Test 103T-43.07: Channel Functional Test 103T-43.11: Channel Functional Test 103T-43.11: Channel Functional Test 103T-43.11: Channel Functional Test 103T-43.11: Channel Calibration 4.3.3.10.3.a Noble Gas Activity Monitor Pri: (RM-IVS-107B) Alt: (RM-IVS-107B) Alt: (RM-IVS-107B) Alt: (RM-IVS-107B) Alt: (RM-IVS-100 Ch 5) 10M-54.3 L5 Log: RM-IVS-107B Channel Check 10M-54.3 L5 Log: RM-IVS-107B Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Check (Back-up) 4.3.3.10.3.b Particulate & Iodins Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-IVS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-IVS-110) Alt: (RM-IVS-110 Ch 10) INSP-44.09-I: Channel Calibration Measuring Device Pri: (RT-IVS-112) IMSP-44.10-I: Channel Calibration IMSP-43.15 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device Pri: (RM-IVS-110 Ch 15) Alt: (RM-IVS-112) IOST-43.11: Channel Functional Test IOST-43.11: Channel Functional Test		Sampler Flow Rate Measuring	1MSP-44.07-I: Channel F	unctional Test		
Alt: (Rotometer; FM-1VS-102 and Vacuum Gauge: PI-1VS-659 for RM-1VS-111) 10ST-43.07: Channel Functional Test 10ZF-43.11: Channel Functional Test 12:ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3 Rx Containment / SLCRS NOTE: Actions for INOPERABLE monitors are documented In the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor 1MSP-43.20-1: Channel Calibration Pri: (RM-1VS-107B) 10M-54.3 L5 Log: RM-1VS-107B Channel Check 10ST-43.07A: RM-1VS-110 Channel Functional Test 10ST-43.09: Source Check 12:ADM-1611.F03: Channel Functional Test 10ST-43.09: Source Check 12:ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.b Particulate & Iodine Sampler Vi: Filter Paper and Charcoal Cartridge for (RM-1VS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 1MSP-44.09-1: Channel Calibration Measuing Device Pri: (FR-1VS-112) 4.3.3.10.3.c System Effluent Flow Rate Measuing Device 1MSP-44.09-1: Channel Calibration Measuing Device 9.11. (RM-1VS-110 Ch 10) 12:ADM-1611.F03: Channel Check (Back-up) 1MSP-44.09-1: Channel Calibration Masp-44.10-1: Channel Functional Test 10M-54.3 L5 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuing Device 1MSP-44.09-1: Channel Calibration Measuing Device Pri: (FR-1VS-110 Ch 10) 10: 4.3.3.10.3.d 1MSP-44.09-1: Channel Calibration Measuing Device Pri: (FM-1VS-110 Ch 15) Pri: (FM-1VS-110 Ch 15) Alt: (Rotometer; FM-1VS-103 and Vacuum Gauge; PI-1VS-660 for RM-1VS-112) 1MSP-4	(Pri: (RM-1VS-109 Ch 15)	10M 54.03 L5 Log: Chan	nel Check	• • • • • • • • • • • • • • • • • • •	
for RM-1VS-111) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3 Rx Containment / SLCRS NOTE: Actions for INOPERABLE monitors are documented In the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor 1MSP-43.20-1: Channel Calibration Pri: (RM-1VS-107B) 10M-54.3 L5 Log: RM-1VS-107B Channel Check Alt: (RM-1VS-110 Ch 5) 10M-54.3 L5 Log: RM-1VS-107 Channel Functional Test 10ST-43.092: Channel Functional Test 10ST-43.094: Source Check 4.3.3.10.3.b Particulate & lodine Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 1MSP-44.09-1: Channel Calibration Measuing Device: Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 4.3.3.10.3.c System Effluent Flow Rate Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 1MSP-44.09-1: Channel Calibration Measuing Device: Pri: (FR-1VS-112) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.09-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.12-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.12-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.12-1: Channel Check (Back-up) 11X: (RM-1VS-110 Ch 15) 10X-ADM-1611.F03: Channel Check <tr< td=""><td></td><td>Alt: (Rotometer: FM-1VS-102 and</td><td>10ST-43.07: Channel Fu</td><td>nctional Test 🖓</td><td></td></tr<>		Alt: (Rotometer: FM-1VS-102 and	10ST-43.07: Channel Fu	nctional Test 🖓		
(Elevated Release) In the Operations Shift Logs, 1/2-HPP-3.06.006, and the RP Shift Logs. 4.3.3.10.3.a Noble Gas Activity Monitor 1MSP-43.201: Channel Calibration 10M-54.3 L5 Log: RM-1VS-107B Channel Check 10M-54.3 L5 Log: RM-1VS-110 Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Check (Back-up) 4.3.3.10.3.b Particulate & Iodine Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-110) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Effluent Flow Rate Pri: (FR-1VS-112) 1MSP-44.09-1: Channel Calibration Measuring Device: 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.01-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device: 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test Alt: (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Test N-1VS-112 1/2-ADM-1611.F03: Channel Check (Back-up)		for RM-1VS-111)	1/2-ADM-1611.F03: Char	nel Check (Ba		
4.3.3.10.3.a Noble Gas Activity Monitor 1MSP-43.20-1: Channel Calibration Pri: (RM-1VS-107B) 10M-54.3 L5 Log: RM-1VS-107B Channel Check Alt: (RM-1VS-110 Ch 5) 10M-54.3 L5 Log: RM-1VS-110 Channel Check 10M-54.3 L5 Log: RM-1VS-110 Channel Functional Test 10ST-43.078: RM-1VS-110 Channel Functional Test 10ST-43.03b Particulate & lodine Sampler 172-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.b Particulate & lodine Sampler 172-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Effluent Flow Rate 1MSP-44.09-1: Channel Check (Back-up) 4.3.3.10.3.c System Effluent Flow Rate 1MSP-44.09-1: Channel Calibration Masper Sampler Flow Rate 1MSP-43.10-1: Channel Functional Test Alt: (RM-1VS-110 Ch 10) 1MSP-43.20: Channel Check Pri: (RM-1VS-110 Ch 15) 10MSP-43.10: Channel Functional	4.3.3.10.3					
Pri: (RM-1VS-107B) 10M-54.3 L5 Log: RM-1VS-107B Channel Check 10M-54.3 L5 Log: RM-1VS-100 Channel Check 10ST-43.03: RM-1VS-110 Channel Check 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Check (Back-up) 4.3.3.10.3.b Particulate & lodine Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c System Effluent Flow Rate Measuring Device Pri: (RH-1VS-112) 1MSP-44.09-1: Channel Calibration 1MSP-43.15 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device Pri: (RM-1VS-110 Ch 10) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device Pri: (RM-1VS-110 Ch 15) 10M-54.3.15 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device Pri: (RM-1VS-110 Ch 15) 10M-54.3.15 Log: Channel Functional Test 10ST-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test 10ST-43.11: Channel Functional Test 10ST-43.11: Channel Functional Test 172-ADM-1611.F03: Channel Check (Back-up)	100100		Shift Logs.			
Alt: (RM-1VS-110 Ch 5) 10M-54.3 L5 Log: RM-1VS-110 Channel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Functional Test 10ST-43.09: Channel Check (Back-up) 4.3.3.10.3.b Particulate & lodine Sampler 172-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c Particulate & lodine Sampler Cartridge for (RM-1VS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 4.3.3.10.3.c System Effluent Flow Rate Measuring Device Pri: (FR-1VS-112) 1MSP-44.09-1: Channel Calibration MSP-43.10: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Pri: (RM-1VS-110 Ch 10) 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device Pri: (RM-1VS-110 Ch 15) 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Tate Measuring Device Pri: (RM-1VS-110 Ch 15) 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Tate Measuring Device Pri: (RM-1VS-110 Ch 15) 10M-54.3.15. Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Tate Measuring Device Pri: (RM-1VS-112) 10ST-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test 12: ADM-1611.F03: Channel Check (Back-up)	4.3.3.10.3.a				el Check	
4.3.3.10.3.b Particulate & lodine Sampler 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.b Particulate & lodine Sampler 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.c Particulate & lodine Sampler 1/2-ADM-1611.F03: Channel Check 4.3.3.10.3.c System Effluent Flow Rate 1MSP-44.09-I: Channel Calibration 4.3.3.10.3.c System Effluent Flow Rate 1MSP-44.10-I: Channel Functional Test 10.41t: Filter Paper and Charcoal 1MSP-44.10-I: Channel Functional Test 4.3.3.10.3.c System Effluent Flow Rate 1MSP-44.10-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring 1MSP-43.19-I: Channel Functional Test (Rotometer) 9.7. RM-10Ch 15) 10M 54.3 L5 Log: Channel Check 10.4.1. (Rotometer, FM-1VS-103 and J) 10ST-43.11: Channel Functional Test (10ST-43.11: Channel Functional Test (10ST-43.11: Channel Functional Test (12-ADM-1611.F03: Channel Check (Back-up)) 4.7. 1/2-ADM-1611.F03: Channel Check (Back-up) 4.7.			10M-54.3 L5 Log: RM-1V	S-110 Channe	I Check	
4.3.3.10.3.b Particulate & Iodine Sampler 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.b Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-110) 1/2-ADM-1611.F03: Channel Check 4.3.3.10.3.c System Effluent Flow Rate Measuring Device 1/MSP-44.09-1: Channel Calibration 4.3.3.10.3.c System Effluent Flow Rate Pri: (FR-1VS-112) 1/2-ADM-1611.F03: Channel Calibration 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1/2-ADM-1611.F03: Channel Calibration MSP-43.19-1: Channel Calibration 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1/MSP-43.19-1: Channel Calibration MSP-43.19-1: Channel Calibration 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1/2-ADM-1611.F03: Channel Check (Back-up) 10ST-43.07: Channel Functional Test (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up)			10ST-43.09: Channel Fu	nctional Test		
4.3.3.10.3.b Particulate & Iodine Sampler Pri: Filter Paper and Charcoal Cartridge for (RM-1VS-110) Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 1/2-ADM-1611.F03: Channel Check 4.3.3.10.3.c System Effluent Flow Rate Measuring Device: Pri: (FR-1VS-112) 1MSP-44.09-I: Channel Calibration 1MSP-44.10-I: Channel Calibration 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-44.10-I: Channel Calibration 1MSP-43.12-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.12-I: Channel Calibration 1MSP-43.12-I: Channel Functional Test 10M 54.3 L5 Log: Channel Check 4.10. ft (RM-1VS-110 Ch 15) Alt: (Rotometer: FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 10ST-43.07: Channel Functional Test 1/2-ADM-1611.F03: Channel Check (Back-up)					ck-up)	
Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 4.3.3.10.3.c System Effluent Flow Rate Measuring Device: Pri: (FR-1VS-112) 1MSP-44.09-I: Channel Calibration 1MSP-43.10-I: Channel Functional Test 10M-54.3 L5 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Calibration 1MSP-43.07: Channel Check (Back-up) 4.11: (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660 10ST-43.07: Channel Functional Test 10ST-43.11: Channel Functional Test 10ST-43.11: Channel Functional Test 172-ADM-1611.F03: Channel Check (Back-up)	4.3.3.10.3.b					
Alt: Filter Paper and Charcoal Cartridge for (RM-1VS-112) 4.3.3.10.3.c System Effluent Flow Rate Measuring Device Pri: (FR-1VS-112) 1MSP-44.09-1: Channel Calibration MSP-44.10-1: Channel Functional Test 10M-54.3 L5 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-1: Channel Calibration 1MSP-43.19-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-1: Channel Calibration 1MSP-43.12-1: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.07: Channel Calibration 1MSP-43.07: Channel Functional Test 10ST-43.07: Channel Check (Back-up)	•	Cartridge for (RM-1VS-110)				
4.3.3.10.3.c System Effluent Flow Rate Measuring Device: Pri: (FR-1VS-112) 1MSP-44.09-I: Channel Calibration 1MSP-44.10-I: Channel Functional Test 10M-54.3 L5 Log: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration 1MSP-43.19-I: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 10ST-43.07: Channel Check 10ST-43.07: Channel Functional Test 10ST-43.07: Channel Functional Test 12: ADM-1611.F03: Channel Check (Back-up)		Alt: Filter Paper and Charcoal				
Pri: (FR-1VS-112) 10M-54.3 L5 Log: Channel Check Ait: (RM-1VS-110 Ch 10) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring 1MSP-43.19-1: Channel Check (Back-up) Device 1MSP-43.19-1: Channel Functional Test (Rotometer) Pri: (RM-1VS-110 Ch 15) 10M 54.3 L5 Log: Channel Functional Test (Rotometer) Alt: (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 10ST-43.07: Channel Functional Test 1/2-ADM-1611.F03: Channel Check (Back-up)	4.3.3.10.3.c	System Effluent Flow Rate			· .	
Alt: (RM-1VS-110 Ch 10) 1/2-ADM-1611.F03: Channel Check (Back-up) 4.3.3.10.3.d Sampler Flow Rate Measuring Device 1MSP-43.19-I: Channel Calibration Pri: (RM-1VS-110 Ch 15) 1MSP-43.72-I: Channel Functional Test (Rotometer) Alt: (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660) 10ST-43.07: Channel Functional Test 10ST-43.11: Channel Functional Test 12-ADM-1611.F03: Channel Check (Back-up)						
Device Pri: (RM-1VS-110 Ch 15) Alt: (Rotometer: FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112)		Alt: (RM-1VS-110 Ch 10)	1/2-ADM-1611.F03: Char	nnel Check (Ba	ck-up)	
Alt: (Rotometer; FM-1VS-103 and Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 1/2-ADM-1611.F03: Channel Check (Back-up)	4.3.3.10.3.0	Device	1MSP-43.72-I: Channel F	unctional Test	(Rotometer)	
Vacuum Gauge: PI-1VS-660 for RM-1VS-112) 10ST-43.11: Channel Functional Test 1/2-ADM-1611.F03: Channel Check (Back-up)	1 4 ya					
		Vacuum Gauge: PI-1VS-660	10ST-43.11: Channel Fu	inctional Test	ok up)	
			1-1/2-AUM-1011.FU3: Chai	nnei Uneck (Ba	υκ-υμ)	
	. •					
		n an			· · · · · · · · · · · · · · · · · · ·	
	••	an an shekara ta ta ta ta ta 1997. Ta ta		· · · · ·	. · · · · ·	
	* :					
			· · · · ·	· 		
		· · · · · · · · · · · · · · · · · · ·				
	• •		· · · · · · · · · · · · · · · · · · ·		-	
			·			
				•	•	

. ...

•

.

•• •

•

- .

•

.

I	Beaver Valley Power	Station	Procedure Nu	umber: 1/2-ODC-1.01
lc:		· · · · · · · · · · · · · · · · · · ·	Unit:	Level Of Use:
			<u>1/2</u>	General Skill Reference
DCM: Index	k, Matrix and History of ODCM	Changes .	Kevisioa:	Page Number: 58 of 70
	AT	TACHMENT C		
		Page 7 of 19		
	ODCM CONTRO	DLS PROCEDURE	MATRIX	
	BV-2 GASEOUS EFF	LUENT MONITOR SUR	/EILLANCES	
	3.3.3.10: Gaseous Effluent Monitors In : During Releases Through The Flow		-13 OPERABLE	
ODCM SR	DESCRIPTION	· · · · · · · · · · · · · · · · · · ·	PROCEDURE	
4.3.3.10	Test Monitors at Table 4.3-13 Frequency		····	•
4.3.3.10.1	SLCRS Unfiltered Pathway (Ventilation Vent)	NOTE: Actions for IN in the Operations Shi Shift Logs.		tors are documented 3.06.006, and the RP
4.3.3.10.1.a	Noble Gas Activity Monitor Pri: (2HVS-RQ101B)	2MSP-43.36-I: Channel 2OM-54.3 L5 Log: Cha 2OST-43.09: Channel 1/2-ADM-1611.F04: C 2-HPP-4.02.018: Sour	annel Check Functional Test hannel Check (Bac	
4.3.3.10.1.b	Particulate & lodine Sampler Pri: Filter Paper and Charcoal Cartridge for (2HVS-RQ101A)	1/2-ADM-1611.F04: C		
4.3.3.10.1.c	Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS- VP101)	2MSP-43.36-1: Chann 2MSP-43.36A-1: Chan Work Request: Chan 2OM-54.3 L5 Log: Cha 1/2-ADM-1611.F04: C	nel Functional Tes lel Calibration (Vel annel Check	ocity Probe)
4.3.3.10.1.d	Sampler Flow Rate Monitor Pri: (2HVS-FIT101-1)	2MSP-43.36-I: Chann 2MSP-43.36A-I: Chan 2OM-54.3 L5 Log: Cha 1/2-ADM-1611.F04: C	el Calibration nel Functional Tes annel Check	t
4.3.3.10.2	SLCRS Filtered Pathway - (Elevated Release)	NOTE: Actions for IN	OPERABLE moni	itors are documented 3.06.006, and the RP
4.3.3.10.2.a	Noble Gas Activity Monitor Pri: (2HVS-RQ109B)	2MSP-43.32-I: 2HVS- 2MSP-43.33-I: 2HVS- 2OM-54.3 L5 Log: Ch 2OST-43.08: Channel 1/2-ADM-1611.F04: C 2-HPP-4.02.018: Sou	RQ109B,C,D Char annel Check Functional Test hannel Check (Bad	nnel Calibration ck-up)
4.3.3.10.2.b	Particulate & lodine Sampler Pri: Filter Paper and Charcoal Cartridge for (2HVS-RQ109A)	1/2-ADM-1611.F04: C	hannel Check	
4.3.3.10.2.c	Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS- FR22) 1 st Alt: (2HVS-FI22A and FI22C) 2 nd Alt: (2HVS-FI22B and FI22D)	2MSP-43.32A-I: Chan 2MSP-43.33-I: 2HVS- 2OM-54.3 L5 Log: Ch 1/2-ADM-1611.F04: C	RQ109B,C,D, Cha annel Check	nnel Calibration
4.3.3.10.2.d	Sampler Flow Rate Monitor Pri: (Monitor Items 28 & 72 for 2HVS-DAU109A)	2MSP-43.32-1: 2HVS- 2MSP-43.32A-1: Char 2MSP-43.33-1: 2HVS- 2OM-54.3 L5 Log: Ch 1/2-ADM-1611.F04: C	nel Functional Tes RQ109B,C,D, Cha annel Check	st Innel Calibration

•

. .

•

•

۰.

. . .

•

· • •

••••

	Beaver Valley Power	Station	1/2-ODC-1.01		
itle:	· · ·		Unit: 1/2	Level Of Use: General Skill Refere	enc
DDCM: Index	, Matrix and History of ODCM	Changes	Revision:	Page Number: 59 of 70	: `
	-AT	FACHMENT C		<i>xy_xa_txt</i>	
	i	Page 8 of 19			
	ODCM CONTRO	OLS PROCEDURE MA	TRIX		
	BV-2 GASEOUS EFFI	UENT MONITOR SURVEIL Continued	LANCES		
TABLE F:3b	413 y			• •	
	3.3.3.10: Gaseous Effluent Monitors In	1/2-ODC-3.03 Table 3.3-13 (
	: During Releases Through The Flow F		· · · · ·	ی یہ بندیوں میں میں میں میں میں میں میں اور	
ODCM SR	DESCRIPTION	p	ROCEDURE		
4.3.3.10.3	Decontamination Building	NOTE: Actions for INOPE			· · ·
	Vent	In the Operations Shift Lo Shift Logs.			:
4.3.3.10.3.a	Noble Gas Activity Monitor	2MSP-43.35-I: Channel Ca		······································	
	Pri: (2RMQ-RQ301B)	20M-54.3 L5 Log: Channel 20ST-43.09: Channel Fund			÷
		2-HPP-4.02.018: Source C	heck (DRMS		Ĵ,
1001001		1/2-ADM-1611.F04: Chann		sk-up)	7
4.3.3.10.3.b	Particulate & lodine Sampler Pri: Filter Paper and Charcoal	1/2-ADM-1611.F04: Chann	nel Check		,
	Cartridge for (2RMQ-RQ301A)			, ,	•
4.3.3.10.3.d	Sampler Flow Rate Monitor	2MSP-43.35-I: Channel Ca			•
	Pri: (2RMQ-FIT301-1)	2MSP-43.35A-I: Channel F 2OM-54.3 L5 Log: Channe		t	,
		1/2-ADM-1611.F04: Channe		:k-up)	ļ
4.3.3.10.4	Condensate Polishing	NOTE: Actions for INOPE	RABLE mon	tors are documented	
	Building Vent	In the Operations Shift Lo	ogs, 1/2-HPP-	3.06.006, and the RP	:
4.3.3.10.4.a	Noble Gas Activity Monitor	Shift Logs. 2MSP-43.38-1: Channel Ca	libration		•
	Pri: (2HVL-RQ112B)	20M-54.3 L5 Log: Channe	I Check	· · · · · ·	,
		20ST 2.43.09: Channel Fu			:
ł		1/2-ADM-1611.F04: Chanr 2-HPP-4.02.018: Source C			
4.3.3.10.4.b	Particulate & Iodine Sampler	1/2-ADM-1611.F04: Chanr			•
	Pri: Filter Paper and Charcoal		• • • •	· · · ·	
4.3.3.10.4.d	Cartridge for (2HVL-RQ112A) Sampler Flow Rate Monitor	2MSP-43.38-I: Channel Ca	alibration	· · · · · · · · · · · · · · · · · · ·	
4.0.0.10.4.0	Pri: (2HVL-FIT112-1)	2MSP-43.38A-I: Channel F		t I	
		20M-54.3 L5 Log: Channe		-1	
4.3.3.10.5	Waste Gas Storage Vault Vent	1/2-ADM-1611.F04: Chann NOTE: Actions for INOPE			•
4.3.3.10.3	Waste Gas Stolage Vault Vent	in the Operations Shift L			
		Shift Logs.			
4.3.3.10.5.a	Noble Gas Activity Monitor	2MSP-43.37-1: Channel Ca			·
	Pri: (2RMQ-RQ303B)	20M-54.3 L5 Log: Channe 20ST-43.09: Channel Fun			•
		1/2-ADM-1611.F04: Chani	nel Check (Ba		
		2-HPP-4.02.018: Source C		Auto Function)	
4.3.3.10.5.b	Particulate & Iodine Sampler Pri: Filter Paper and Charcoal	1/2-ADM-1611.F04 Chann	el Check		
1	Cartridge for (2RMQ-RQ303A)				
4.3.3.10.5.d	Sampler Flow Rate Monitor	2MSP-43.37-1: Channel Ca			•
	Pri: (2RMQ-FIT303-1)	2MSP-43.37A-I Channel F		t	
1		20M-54.3 L5 Log: Channe	el Uneck		

.•

.

. •

.

-: _) -- _)

•

۰. .

••

.

•

T	Beaver Valley Power	Station	Procedure Nu	
	Seaver valley I Ower		·	1/2-ODC-1.01
itle:			Unit:	Level Of Use:
			1/2	General Skill Reference
DCM: Index	, Matrix and History of ODCM	Changes	Revision:	Page Number:
			3	60 of 70
	AT	TACHMENT C		
		Page 9 of 19		
		OLS PROCEDURE N	MATRIX	
	BV-1 AND 2 LIQUID EFFLU	ENT CONCENTRATION	SURVEILLANCE	S
TABLE F:4				
	3.11.1.1: Effluent Concentration Withir	10 Times 10CFR20 EC	S	
APPLICABILITY	: At All Times	· .		
ODCM SR	DESCRIPTION	<u></u>	PROCEDURE	
4.11.1.1.1	DESCRIPTION Sample and Analyze Radioactive	1/2-ADM-1601: Liquid		
****	Liquid Wastes per Table 4.11-1		nauwasio Discridi	969
4.11.1.1.1.A	Batch Waste Release Tanks	CHM CP 3: Sampling a	and Testing	
		CHM CP 5: Radiochem	nical Procedures	
	· ·	CHM CP 8: Logs and F	Forms (Analysis)	
		CHM CP 9: Conduct of	Operation	
		1/2-ADM-1611.F03 & F		
		1/2-HPP-3.06.001.F01	: LW Tank Sampli	ng
		1/2-HPP-4.02.002.F02		
4.11.1.1.1.B	Continuous Releases	1/2-HPP-4.05.023: Gai CHM CP 3: Sampling a		s Matrix
4.11.1.1.1.D	Commuous Aeleases	CHM CP 5: Sampling a CHM CP 5: Radiochen		
	1	CHM CP 8: Logs and F		
		CHM CP 9: Conduct of		
		1/2-ADM-1611.F03 & F		
		,1/2-HPP-4.02.002.F02		
		1/2-HPP-4.05.023: Ga		is Matrix
4.11.1.1.2	Use ODCM Methodology to	1/2-HPP-3.06.005.F01		:
4.11.1.1.3	Assure Compliance	1/20M-17.4A.D: RWD		
4.11.1.1.3	Take Turbine Building Grab Sample When BV-1 Primary to	CHM CP 3: Sampling a CHM CP 5: Leak Rate		
ł	Secondary Leakage Exceeds 0.1	CHM CP 8: Logs and F		
	gpm (142 gpd)	1/2-ADM-1611.F03 & F		ng
1		1/2-HPP-3.06.001.F01	: LW Tank Sampli	-
l -		1/2-HPP-3.06.005.F01		
	· · · · · · · · · · · · · · · · · · ·	1/2-HPP-4.02.002.F02		npling
4.11.1.1.4	Take Turbine Building Grab	CHM CP 3: Sampling		• • •
	Sample When BV-2 Primary to	CHM CP 5: Leak Rate		
1	Secondary Leakage Exceeds 0.1 gpm (142 gpd)	CHM CP 8: Logs and I 1/2-ADM-1611.F03 & I		na
	Shurfier Shot	1/2-HPP-3.06.001.F01		
l.		1/2-HPP-3.06.005.F01		•• • •
		1/2-HPP-4.02.002.F02		npling
4.11.1.1.5	Take Grab Samples Prior to BV-2	1/2-ADM-1611.F03 & I	F04: Sump Sampli	ng
	Recirculation Drain Pump	1/2-HPP-3.06.001.F01	: LW Tank Sampli	ng ·
	Discharge to Catch Basin No. 16	20M-9.2: Rx Plant Ver		
1	· · ·	20M-9.4F: Drain RSS		
		20M 51: OM Clearance		

·

··· · ·

.

.

- -

÷

..

Beaver Valley Power Station	• • • •	Procedure N	umber: 1/2-ODC-	1.01
itle:		Unit:	Level Of U	ic:
		1/2 Revision:	General Page Numb	Skill Reference
DDCM: Index, Matrix and History of ODCM Changes	· · ·	3	6	Lof_70
ATTACHMENT (Page 10 of 19 ODCM CONTROLS PROCED)		TRIX		
BV-1 AND 2 LIQUID EFFLUENT DOSE	SURVEILL	ANCES		3
TABLE F:5 ODCM Control 3.11.1.2: Liquid Effluent Dose APPLICABILITY: At All Times		<i>.</i>	•	
ODCM SR DESCRIPTION		ROCEDURE	1	
4.11.1.2.1 Using the ODCM - Determine 1/2-HPP-3.06.0 Cumulative Dose From Liquid SHP Letter: Mon Effluents Every 31 Days 1/20M-17.4A.D	nthly Dose F	DA-L Projection	· · · · · · · · · · · · · · · · · · ·	
				•
				:
				:
•				•
				•
			•	
•				:
				3
• .				
				t .
				\$
``				
				•
				:
			-	•

•

.

••

:

··· /

• ·

•

..

			1	• • • • • • • • • • • • • • • • • • • •
,	Beaver Valley Power	Station	Procedure Nu	mber: 1/2-ODC-1.01
tle:			Unit	Level Of Use:
	ex, Matrix and History of ODCM	Changes	1/2 Revisioa:	General Skill Reference Page Number:
			3	62 of 70
	•	TACHMENT C		
	ODCM CONTRO	Page 11 of 19 DLS PROCEDUR	EMATRIX	
	BV-1 AND 2 LIQUID EFF	LUENT TREATMENT	· SURVEILLANCES	
ABLE F:6 DCM Contro	ol 3.11.1.3: Liquid Effluent Treatment Sys	stem		
PLICABILI	TY: At All Times			
ODCM SR	DESCRIPTION		PROCEDURE	<u> </u>
4.11.1.3.1	Using the ODCM - Project the Liquid Release Dose Every 31 Days	1/2-HPP-3.06.005. SHP Letter: Month		
<u></u>		1/20M-17.4A.D: R	NDA-L	
				· .
•				
	•			
				·
<u>, 1</u> 11				
				· · ·
				-

. .

ţ	Beaver Valley Power	Station	Procedure	Number: 1/2-ODC-1	.01
Title:			¹ Unit:	Level Of Use	:
	lex, Matrix and History of ODCM	Changes	<u>1/2</u> Revision:	Page Numbe	kill Referenc
		FACHMENT C	3_	63	of 70
	•	Page 12 of 19			
	ODCM CONTRO		E MATRIX		
	BV-1 AND 2 LIQUID STORAGE	TANK ACTIVITY	Y LIMIT SURVI	EILLANCES	. •
TABLE F:7 ODCM Contro	<u>ol 3.11.1.4</u> : <u><</u> 10 Curies in 1BR-TK-6A&B,	1LW-TK-7A&B and M	lisc. Temp Liquid Ta	anks. Also, <4.	2 Curies in
	d 2QSS-TK21. TY: At All Times		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	· · · · · ·	
ODCM	DESCRIPTION		PROCEDURI	 E	
SR 4.11.1.4.1	Every 7 days Analyze a tank sample	1/2-HPP-3.06.001.F	05: Activity Determ	ination	
	when radioactive material is added to tanks except the RWSTs.		01: RWDÁ-L		
		10M-17.4.AJ: LW 1	ransfer to 1LW-TK	-7A&B	л
	For RWST's, analyze sample within 7 days of reactor cavity drain down	10M-54.3 L5 Log It 10M-54.3 L5 Log It	em 132:		
	back to the RWST.	10M-54.3 L5 Log It 10M-54.3 L5 Log It	em 200:	•.	
	الم	20M-17.4B: LW to	SG Blowdown Tank	<	
		• • • · · · · · · · ·	•		
· · · ·					
•					ť
~				•	
	المراجع (المراجع) . (مراجع المراجع) . (مراجع) .	e en			•
					• • •
• • •					
* * * **	1		· · · · ·		
					•
				-	· ·
					·
					:
					1
				-	
1					· ·

В	leaver Valley Power S	Station	Procedure N	1/2-ODC-1.01	•	
itle:			Unit:	Level Of Use:	<u> </u>	
			1/2	General Skill Refer	ence	
DCM. Index	x, Matrix and History of ODCM Changes Revision: Page Number:					
		changes	3	64 of 70	•	
	ATT	ACHMENT C				
	Pa	age 13 of 19				
		LS PROCEDURE	MATRIX			
	BV-1 AND 2 GASEOUS	EFFLUENT DOSE SUI	RVEILLANCES			
TABLE F:8	· · · · ·					
	<u>11.2.1</u> : Gaseous Effluent Dose Rates					
APPLICABILITY:	At All Times					
ODCM SR	DESCRIPTION	1	PROCEDURE			
4.11.2.1.1	Using the ODCM - Determine the	1/2-HPP-3.06.006.F01:		· · · · · · · · · · · · · · · · · · ·	<u> </u>	
1	-Noble Gas Effluent Dose Rate	1/2-ENV-01.03.F01: Co			,	
		1/2-HPP-3.06.012.F01: 10M-19.4E, H: RWDA-				
		1/20M-19.4A.B: RWDA				
4.11.2.1.2	Sample and Analyze per Table	1/2-ADM-1601: Gase	eous Radwaste Dis	charges		
	4.11-2 to Determine Inhalation					
4.11.2.1.2.A	Pathway Dose Waste Gas Storage Tank -	CHM CP 3: Sampling a	nd Testing			
To I Token TokenTA	Grag Sample Each Tank	CHM CP 5: Radiochem	ical Procedures			
		CHM CP 8: Logs and F				
		CHM CP 9: Conduct of 1/2-ADM-1611.F03 & F		ina		
		1-HPP-3.06.003.F01: 0	W Tank Sampling			
		1/2-HPP-3.06.006.F01: 1/2-HPP-4.02.002.F01:		22		
4.11.2.1.2.B	Containment Purge -	CHM CP 3: Sampling a		ng		
	Grag Sample Each Purge	CHM CP 5: Radiochem	ical Procedures		•	
-		CHM CP 8: Logs and F CHM CP 9: Conduct of				
		1/2-ADM-1611.F03 & F		ina		
		1/2-HPP-3.06.006.F01:	RWDA-G			
		1/2-HPP-3.07.003.F01: 1/2-HPP-4.02.002.F01		20		
4.11.2.1.2.C	Ventilation Systems	1/2-11-1-4.02.002.101	rad morinor Sample	<u>'9</u>		
4.11.2.1.2.C.1	BV-1 Grab and Continuous Samples	CHM CP 3: Sampling a	Ind Testing			
thru ,		CHM CP 5: Radiochem	nical Procedures			
4.11.2.1.C.3 and	•	CHM CP 8: Logs and F CHM CP 9: Conduct of				
4.11.2.1.2.D.1		1/2-ADM-1611.F03 & F	04: GW Tank Samp			
thru		1/2-ENV-01.03.F01: C				
4.11.2.1.2.D.3		1/2-HPP-4.02.002.F01 1/2-HPP-4.02.017.Fxx		ng ple Flow Valve Line-Up		
		1-HPP-5.01.001: SA-9	10 Emergency Oper	ation		
•		1-HPP-5.01.002: SPIN		ration		
4.11.2.1,2.C.4 thru	BV-2 Grab and Continuous Samples	CHM CP 3: Sampling a CHM CP 5: Radiochen	nical Procedures		:	
4.11.2.1.2.C.8	· ·	CHM CP 8: Logs and I	Forms (Analysis)			
and		CHM CP 9: Conduct of	Operation	ling		
4.11.2.1.2.D.4 thru		1/2-ADM-1611.F03 & 1 1/2-ENV-01.03.F01: C				
4.11.2.1.2.D.8		1/2-HPP-4.02.002.F01 2-HPP-5.04.001: Eme	: Rad Monitor Sampl	ing		

. . .

•

....

- ·

•

.

<u>-</u> ·

.

.

• •

	Beaver Valley Power	r Station	Procedure Nu		1.01
Fitle:			Unit:	Level Of L	Jse:
	low Motify and History of ODC	(Changes)	1/2 Revision:	General Page Num	Skill Referen
	lex, Matrix and History of ODC		3		55 of 70
	. A	ITACHMENT C Page 14 of 19			
	ODCM CONTR	ROLS PROCEDURE M	IATRIX		
	BV-1 AND 2 GASEOUS	EFFLUENT AIR DOSE SU	RVEILLANCES	•••	
TABLE F:9					
APPLICABILI	<u>ol 3.11.2.2</u> : Gaseous Effluent Air Doses <u>TY</u> : At All Times) see ble Skerigerije. T	· · · · ·		
ODCM	DESCRIPTION	-	PROCEDURE	,	
4.11.2.2.1	Using the ODCM - Determine the	1/2-HPP-3.06.006.F01: RV	WDA-G		
	Noble Gas Cumulative Dose Contributions Every 31 Days	1/2-ENV-01.03.F01: Contin 1/2-HPP-3.06.012.F01: Ab	normal Gaseous	Releases	
		1/-HPP-4.02.002.F01: Rad 10M-19.4E, H: RWDA-G f	or Unit 1 GWDT's	-	
		1/2OM-19.4A.B: RWDA-G SHP Letter: Monthly Dose		S	•
<u> </u>	L				<u> </u>
	•				
•					
			·	·	
	•				
	•		•		
	· ·				
·			•		
				-	

ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	M Changes FTACHMENT C Page 15 of 19 COLS PROCEDURE MAT	Unit: <u>1/2</u> Revision: <u>3</u>	1/2-ODC-1.01 Level Of Use: General Skill Reference Page Number: 66 of 70
DDCM: Index, Matrix and History of ODCM AT ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	TTACHMENT C Page 15 of 19 COLS PROCEDURE MAT	1/2 Revision: 3	General Skill Reference Page Number:
AT ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	TTACHMENT C Page 15 of 19 COLS PROCEDURE MAT	Revision: 3	Page Number:
AT ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	TTACHMENT C Page 15 of 19 COLS PROCEDURE MAT	3	
ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	Page 15 of 19 OLS PROCEDURE MAT	_ 1 /	
ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	Page 15 of 19 OLS PROCEDURE MAT	TRIX	
ODCM CONTR BV-1 AND 2 GASEOUS EFFLUENT	OLS PROCEDURE MAT	RIX	
BV-1 AND 2 GASEOUS EFFLUENT		RIX	
	PARTICULATE AND IODINE I		
		OSE SURVE	EILLANCES
TABLE F:10	- And Indian Desar		• '
<u>ODCM Control 3.11.2.3</u> : Gaseous Effluent Particulate <u>APPLICABILITY</u> : At All Times	e And Iodine Doses		
ALT LIONDICITY. ACAR TIMES			•
ODCM DESCRIPTION	P	ROCEDURE	<u> </u>
SR		<u> </u>	
4.11.2.3.1 Using the ODCM - Determine the Particulate & Radiolodine Cumulative	1/2-HPP-3.06.006.F01: RW 1/2-ENV-01.03.F01: Continue		Pormit
Dose Contributions Every 31 Days	1/2-HPP-3.06.012.F01: Abn		
	1/2-HPP-4.02.002.F01: Rac	Monitor San	npling
· · · · · · · · · · · · · · · · · · ·	10M-19.4E, H: RWDA-G fo	r Unit 1 GWE	DTs
	1/2OM-19.4A.B: RWDA-G f SHP Letter: Monthly Dose F		ST's
	STIP Letter. Woltuny Dose I	TOJOCION	
•			
•			
•			
·			
т.•			
、			

• • • • • •

•

·

. .

• • • • •	Beaver Valle	ey Power	Station	•	Procedure		DC-1.01
Title:				<u>.</u>	Unit:	Level	Of Use: eral Skill Referen
DDCM: Ind	lex, Matrix and Hist	orv of ODCM	Changes	· • ,	<u>1/2</u> Revision:		lumber:
			TACHMENT	Г <u>С</u>	3	I	67 of 70
		1	Page 16 of 19	•			
	ÓD	CM CONTRO	OLS PROCE	DURE M	IATRIX		
	BV-1 AND	2 GASEOUS E	FLUENT TREA	TMENT S	URVEILLANC	ES	
TABLE F:11 ODCM Contr APPLICABIL	<u>ol 3.11.2.4</u> : Gaseous Eff <u>ITY</u> : At All Times	luent Treatment	System				
ODCM	DESCRIPT	ION	<u> </u>		PROCEDUR	E,	• • • •
SR 4.11.2.4.1	Using the ODCM - Pr Release Dose from th Days	oject the Gas ne Site Every 31	1/2-HPP-3.00 SHP Letter: M	03.F01: Co 5.012.F01: Monthly Do	ntinuous Relea Abnormal Gas se Projection	eous Rele	ases
			10M-19.4E, I	H: RWDA-	G for Unit 1 GV -G for Unit 2 G	/DT's WST's	
<u></u>			<u></u>			<u>.</u>	
	• •	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	16 1 A 2		-		
.•	· · · · · · · · · · · · · · · · · · ·	· · · · ·					
			, <u>,</u>	• , •	·. •	.:	
· · · · · ·		-	ere and and a second	· •			
		· · · ·		, • ,		 	
·· ···	• .				· •.		
	· .			~			
•							
- 4.5					•		
			-				
						-	i
							·

... .

. .

.

tte: DCM: Index, Matrix and History of ODCM Changes ATTACHMENT C Page 17 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES TABLE F:12a DDCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM DESCRIPTION PROCEDURE SR 4.11.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity >100uCi/ml)		Beaver Valley Power	Station	Procedure N	umber: 1/2-ODC-1.01
ATTACHMENT C 3 68 of 70 ATTACHMENT C Page 17 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES BV-1 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES TABLE F:12a ODCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM DESCRIPTION SR 4.11.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity	itle:			Unit:	Level Of Use:
ATTACHMENT C Page 17 of 19 ODCM CONTROLS PROCEDURE MATRIX BV-1 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES FABLE F:12a ODCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM DESCRIPTION PROCEDURE ALT1.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity 104-19.4.G: GW Disposal System	DCM: Inc	lex, Matrix and History of ODCM	Revision:	<i>.</i>	
BV-1 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES FABLE F:12a ODCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM PROCEDURE ODCM PROCEDURE APPLICABILITY: At All Times ODCM PROCEDURE 1/2-HPP-3.06.003.F01: Activity Determination Adding Rad Material & (RCS Activity		P	Page 17 of 19		
TABLE F:12a ODCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM DESCRIPTION PROCEDURE SR 1/2-HPP-3.06.003.F01: Activity Determination 4.11.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity 10M-19.4.G: GW Disposal System		ODCM CONTRO	OLS PROCEDURE	MATRIX	
ODCM Control 3.11.2.5: Gas Storage Tank Activity Must be ≤52000 Curies Noble Gas (Considered Xe-133) APPLICABILITY: At All Times ODCM DESCRIPTION PROCEDURE SR 1/2-HPP-3.06.003.F01: Activity Determination 4.11.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity 10M-19.4.G: GW Disposal System		BV-1 GASEOUS STORAGE	TANK ACTIVITY LIMI	SURVEILLANCE	S
SR 4.11.2.5.1 Determine Tank Gas Contents when Adding Rad Material & (RCS Activity 1/2-HPP-3.06.003.F01: Activity Determination 10M-19.4.G: GW Disposal System 10M-19.4.G: Material System		1			
Adding Rad Material & (RCS Activity 10M-19.4.G: GW Disposal System			st be <u><</u> 52000 Curies No	ble Gas (Consider	ed Xe-133)
	ODCM	TY: At All Times	ist be <u><</u> 52000 Curies No		ed Xe-133)
	APPLICABILI ODCM SR	TY: At All Times DESCRIPTION Determine Tank Gas Contents when Adding Rad Material & (RCS Activity	1/2-HPP-3.06.003.F0	PROCEDURE 1: Activity Determin	
	APPLICABILI ODCM SR	TY: At All Times DESCRIPTION Determine Tank Gas Contents when Adding Rad Material & (RCS Activity	1/2-HPP-3.06.003.F0	PROCEDURE 1: Activity Determin	
	APPLICABILI ODCM SR	TY: At All Times DESCRIPTION Determine Tank Gas Contents when Adding Rad Material & (RCS Activity	1/2-HPP-3.06.003.F0	PROCEDURE 1: Activity Determin	

BV-2 GASEOUS STORAGE TANK ACTIVITY LIMIT SURVEILLANCES

TABLE F:12b

<u>ODCM Control 3.11.2.5</u>: Connected Group of Gas Storage Tanks must be ≤19000 Curies Noble Gas (Considered Xe-133) <u>APPLICABILITY</u>: At All Times

ODCM SR DESCRIPTION PROCEDURE	
4.11.2.5.1Determine Gaseous Waste Tank Rad Material When Adding Rad Material to the Tank.1/2-HPP-3.06.003.F01: Activity Determination 20M-19.2: GW Precautions & Limitations 20M-19.4G: GW transfer from Unit 2 20M-54.3 L5 Log Item 133:	

· ·· · · · · · · ·

1. 1. 1. 1. ٠

	Beav	ver Valle	y Power	Station	• • • •	Procedure Nu	nber: /2-ODC-1.0)1
Title:				<u></u>		Unit: 1/2	Level Of Use: General Ski	
ODCM	Index, Mat	rix and Histo	ory of ODCM	Changes		Revision: 3	Page Number: 69 0	of 70
				TACHMENT	С			
		ODO		Page 18 of 19 DLS PROCED	URE MAT	RIX		
		. • ;	BV-1 AND 2 TO	TAL DOSE SUR	VEILLANCE	s		
TABLE ODCM (APPLIC		: Liquid And Ga Times	aseous Doses			۰۰ ۲۵ ۱۰ مالی		
ODC		DESCRIPTI	ON		PR	OCEDURE	•	
4.11.4	1.1 Using I Cumul	he ODCM - Det ative Gas & Liqu I 3.11.1.2, 3.11.	uid Dose per 🐃	1/2-ENV-01.05 1/2-HPP-3.06.0 1/2-HPP-3.06.0 1/2-ENV-01.03 1/2-HPP-3.06.0 1/2-ENV-01.04	05.F01: RWI 06.F01: RWI .F01: Continu 012.F01: Abno	DA-L DA-G Ious Release ormal Gaseou	Permit Is Releases	, <u>.</u>
						-		
							÷.,	:
						•	•	
•	•••• •		· · · ·				- · · ·	· · · · · · · · · · · · · · · · · · ·
••••		··· · · ·						
· ·	· · · ·							
	•							
				•		· · · · ·		· · · · · · · · · · · · · · · · · · ·
· · · ·	∯-≠	•	· · · · · · · · · · · · · · · · · · ·		- •	· · · ·	· · · · · · · · · · · · · · · · · · ·	·: <u>·</u> ···
	·				· · · · ·		279 ° -	· · · ·
				į	· · · · · · ·	an the second second	··.	.:
			•	•••• '…	•	t. : *	41 j.	·
•	•				· •			
								Ý
								:
					<i>,</i> ·		-	
-						·		• :
		• • • • •						

Beaver Valley Power Station			Procedure Number:		
	Beaver valley rower			1/2-ODC-1.01	
tle:			Unit: 1/2	Level Of Use: General Skill Reference	
DCM In	dex, Matrix and History of ODCM	Changes	Revision:	Page Number:	
			3	70 of 70	
	,	ACHMENT C	· •		
		age 19 of 19			
	ODCM CONTRO	LS PROCEDURE	MATRIX		
	BV-1 AND 2 REMP	PROGRAM SURVE	LLANCES		
TABLE F:14					
ODCM Contr	ol 3.12.1: Radiological Environmental Mon	itoring Program (REM	P)	,	
APPLICABIL	ITY: At All Times	• • •			
ODCM	DESCRIPTION	1	PROCEDURE	· · ·	
SR		• •	•		
4.12.1.1	Using Locations in the ODCM -Collect and Analyze Samples per Tables		scription of overall R		
	3.12-1, 3.12-2 & 4.12-1	1/2-ENV-03.01: EN	vironmental Sampling	9	
				• ,	
•					
	· ·				
		•			
TABLE F:15	<u>ol 3.12.2</u> : Land Use Census				
APPLICABIL	<u>010.12.2</u> . Lana 030 001303				
	<u>ITY</u> : At All Times				
ODCH					
ODCM SR	DESCRIPTION		PROCEDURE		
	DESCRIPTION Using the Best Available Method -		scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R		
ŚR	DESCRIPTION Using the Best Available Method -		scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R	EMP	
ŚR	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly	1/2-ENV-4.02: Con	scription of overall R	EMP	
[•] SR 4.12.2.1 TABLE F:16	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1	1/2-ENV-4.02: Con and b	scription of overall R	EMP	
SR 4.12.2.1 TABLE F:16 ODCM Conta	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1	1/2-ENV-4.02: Con and b	scription of overall R	EMP	
SR 4.12.2.1 TABLE F:16 ODCM Conta	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1	1/2-ENV-4.02: Con and b	scription of overall R	EMP	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Pro- ITY: At All Times DESCRIPTION Include Analysis Results of the	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program DESCRIPTION Include Analysis Results of the Interlaboratory Comparison Program	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Pro- ITY: At All Times DESCRIPTION Include Analysis Results of the	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	
SR 4.12.2.1 TABLE F:16 ODCM Contr APPLICABIL	DESCRIPTION Using the Best Available Method - Conduct a Land Use Census Yearly Between 6/1 & 10/1 rol 3.12.3: Interlaboratory Comparison Program in the Analysis Results of the Interlaboratory Comparison Program in the Annual Radiological	1/2-ENV-4.02: Con and b	scription of overall R pliance to ODCM Co PROCEDURE	EMP ontrol 3.12.2 Action a	

••

.

RTL #A9.621B

1. S. S. S. S. J. J.

Beaver Valley Power Station

Unit 1/2

1/2-ODC-2.01

ODCM: LIQUID EFFLUENTS

Document Owner Manager, Radiation Protection

· · · · ·	
Revision Number	2
Level Of Use	General Skill Reference
Safety Related Procedure	Yes

•

•

Title Unit LertiOU2cit ODCM: LIQUID EFFLUENTS Revision: Pres Number: 2 2 of 38 TABLE OF CONTENTS 1.0 PURPOSE 3 2.0 SCOPE 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 PROCEDURE 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 20 Dose Limits (ODCM CONTROL 3.11.1.1) 19 8.3.1 BV-1 Monitor Alarm Setpoint Determination 19 8.3.2 Continuous Releases 19 8.3.3 Compliance With 10 CFR 20 Dose Limits (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2) 19 8.3.4.2 BV-1 Laundy and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Ra			Beave	er Valley Power Station	Procedure No	umber: 1/2-ODC-2.01
ODCM: LIQUID EFFLUENTS Revision Page Number: 2 2 of 38 TABLE OF CONTENTS 1.0 PURPOSE 3 2.0 SCOPE 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 6.0 PROCEDURE 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.3 Cu	Title:				Unit:	Level Of Use:
Image: Construction of the construc						
1.0 PURPOSE 3 2.0 SCOPE 3 3.0 REFERENCES AND COMMITMENTS 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 6.0 PROCEDURE 7 8.1 Alarm Setpoint Determination 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2 And 3.11.1.3).19 8.3.1 8.3.1 Curulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.1 Curulation of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection of Dosese	ODC	M: LI	QUID EFI	FLUENTS		
1.0 PURPOSE 3 2.0 SCOPE 3 3.0 REFERENCES AND COMMITMENTS 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 70 REREQUISITES 6 8.0 PROCEDURE 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3).19 8.3.1 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation of Doses (ODCM CONTROL 3.11.1.3) 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Liquid Radwaste System Components <td></td> <td></td> <td></td> <td>·····</td> <td>2</td> <td>_12 of 38</td>				·····	2	_12 of 38
2.0 SCOPE 3 3.0 REFERENCES AND COMMITMENTS 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 4.2 Forms 5 6.0 ACCEPTANCE CRITERIA 6 70 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 Liquid Radwaste System Components 23 8.4.1				TABLE OF CONTENTS		
2.0 SCOPE 3 3.0 REFERENCES AND COMMITMENTS 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 70 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection of Doses (ODCM CONTROL 3.11.1.2) 19 </td <td>10</td> <td></td> <td>POSE</td> <td></td> <td></td> <td>2</td>	10		POSE			2
3.0 REFERENCES AND COMMITMENTS 3 3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 70 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 17 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 12 8.4 BV-1 Liquid Radwaste System Components 22 8.4.1 BV-1 Liquid Radwaste System Components <						
3.1 References 3 3.2 Commitments 5 4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 7.0 PREREQUISITES 6 8.0 PROCEDURE 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.3 Drojection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 4.4.3 BV-2 Liquid Radwaste System Components 24 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
3.2 Commitments	5.0					
4.0 RECORDS AND FORMS 5 4.1 Records 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 7.0 PREREQUISITES 6 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2 And 3.11.1.3).19 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 <t< td=""><td></td><td>÷ · -</td><td></td><td></td><td></td><td></td></t<>		÷ · -				
4.1 Records 5 4.2 Forms 5 4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 7 8.1 Alarm Setpoints 6 8.0 PROCEDURE 7 7 8.1 Alarm Setpoints 7 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2 And 3.11.1.3).19 8.3.1 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 I BV-1 Liquid Radwaste System Components 23 8.4.1 BV-1 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3	40					
4.2 Forms 5 5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 7.0 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3).19 8.3.1 S.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.4 BV-1 Liquid Radwaste System Components 23 8.4.1 BV-1 Liquid Radwaste System Components 24 8.4.2 BV-1 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-1 Liquid Radwaste System Components 24	· - 1.0					
5.0 PRECAUTIONS AND LIMITATIONS 5 6.0 ACCEPTANCE CRITERIA 6 7.0 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3).19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 8.3 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 Liquid Radwaste System 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 30 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT C INGESTION DOSE COMMITMENT FACTORS 32 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
6.0 ACCEPTANCE CRITERIA 6 7.0 PREREQUISITES 6 8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3).19 8.3.1 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 22 8.4 Liquid Radwaste System 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 30 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT D LIQUID RADWASTE SYSTEM	50					
7.0 PREREQUISITES						
8.0 PROCEDURE 7 8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROL 3.11.1.2 And 3.11.1.3) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 Liquid Radwaste System 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 26 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT C INGESTION DOSE COMMITMENT FACTORS 32 ATTACHMENT D LIQUID RADWASTE SYSTEM						
8.1 Alarm Setpoints 7 8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.4 Liquid Radwaste System 22 8.4 Iquid Radwaste System 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 26 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT C INGESTION DOSE COMMITMENT FACTORS 32 ATTACHMENT D LIQUID RADWASTE SYSTEM 35 ATTACHMENT E SITE BOUNDARY F						
8.1.1 BV-1 Monitor Alarm Setpoint Determination 7 8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 Liquid Radwaste System 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 26 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT C INGESTION DOSE COMMITMENT FACTORS 32 ATTACHMENT D LIQUID RADWASTE SYSTEM 35 ATTACHMENT E SITE BOUNDARY FOR LIQUID EFFLUENTS 38	0.0					
8.1.2 BV-2 Monitor Alarm Setpoint Determination 12 8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1) 17 8.2.1 Batch Releases 17 8.2.2 Continuous Releases 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) 19 8.3 Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) 19 8.3.1 Cumulation Of Doses (ODCM CONTROL 3.11.1.2) 19 8.3.2 Projection Of Doses (ODCM CONTROL 3.11.1.3) 22 8.4 Liquid Radwaste System 22 8.4.1 BV-1 Liquid Radwaste System Components 23 8.4.2 BV-1 Laundry and Contaminated Shower Drain System Components 24 8.4.3 BV-2 Liquid Radwaste System Components 24 ATTACHMENT A LIQUID SOURCE TERMS 26 ATTACHMENT B RECIRCULATION TIMES 30 ATTACHMENT C INGESTION DOSE COMMITMENT FACTORS 32 ATTACHMENT D LIQUID RADWASTE SYSTEM 35 ATTACHMENT E SITE BOUNDARY FOR LIQUID EFFLUENTS 38				•		
8.2 Compliance With 10 CFR 20 EC Limits (ODCM CONTROL 3.11.1.1)						
8.2.1Batch Releases178.2.2Continuous Releases198.3Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3)198.3.1Cumulation Of Doses (ODCM CONTROL 3.11.1.2)198.3.2Projection Of Doses (ODCM CONTROL 3.11.1.3)228.4Liquid Radwaste System228.4.1BV-1 Liquid Radwaste System Components238.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38		8.2				
8.2.2Continuous Releases198.3Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) .198.3.1Cumulation Of Doses (ODCM CONTROL 3.11.1.2)8.3.2Projection Of Doses (ODCM CONTROL 3.11.1.3)8.4Liquid Radwaste System8.4.1BV-1 Liquid Radwaste System Components8.4.2BV-1 Laundry and Contaminated Shower Drain System Components8.4.3BV-2 Liquid Radwaste System Components248.4.3ATTACHMENT ALIQUID SOURCE TERMSATTACHMENT BRECIRCULATION TIMESATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38			-			-
8.3Compliance With 10 CFR 50 Dose Limits (ODCM CONTROLS 3.11.1.2 And 3.11.1.3) .19 8.3.18.3.1Cumulation Of Doses (ODCM CONTROL 3.11.1.2)			8.2.2			
8.3.1Cumulation Of Doses (ODCM CONTROL 3.11.1.2)198.3.2Projection Of Doses (ODCM CONTROL 3.11.1.3)228.4Liquid Radwaste System228.4.1BV-1 Liquid Radwaste System Components238.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38	1	8.3	Complia			
8.3.2Projection Of Doses (ODCM CONTROL 3.11.1.3)228.4Liquid Radwaste System228.4.1BV-1 Liquid Radwaste System Components238.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38						
8.4Liquid Radwaste System228.4.1BV-1 Liquid Radwaste System Components238.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38			8.3.2		•	
8.4.1BV-1 Liquid Radwaste System Components.238.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components.24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS.32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS.38		8.4	Liquid R	•		
8.4.2BV-1 Laundry and Contaminated Shower Drain System Components248.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38			-	•		
8.4.3BV-2 Liquid Radwaste System Components24ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38			8.4.2			
ATTACHMENT ALIQUID SOURCE TERMS26ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38					•	▲
ATTACHMENT BRECIRCULATION TIMES30ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS32ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38	AT	ГАСН	MÈNT A			
ATTACHMENT CINGESTION DOSE COMMITMENT FACTORS						
ATTACHMENT DLIQUID RADWASTE SYSTEM35ATTACHMENT ESITE BOUNDARY FOR LIQUID EFFLUENTS38						
ATTACHMENT E SITE BOUNDARY FOR LIQUID EFFLUENTS				LIQUID RADWASTE SYSTEM	•	
				SITE BOUNDARY FOR LIOUID EFFLU	ENTS	
				· · · · · · · · · · · · · · · · · · ·		
		÷.				
	l					

Beaver Valley Power Station	Procedure No	umber: 1/2-ODC-2.01
Title:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: LIQUID EFFLUENTS	Revision:	Page Number: 3 of 38
1.0 <u>PURPOSE</u>	- 12	
1.1 This procedure provides the calculational methodology to be us following release parameters as denoted in the Administrative 1/2 Technical Specifications. ^(3.2.1)		
1.1.1 Liquid effluent monitor alarm setpoints (Technical Specifi	cation 6.8.	6.a, Item 1)
1.1.2 Liquid effluent release concentration calculations (Technic 2)	al Specific	cation 6.8.6.a, Item
1.1.3 Liquid effluent dose projection and cumulative dose calcul Specification 6.8.6.a, Items 4 and 5)	lations (Te	chnical
1.2 This procedure also provides information related to the followi	ng:	-
1.2.1 Liquid Radwaste Treatment System (Technical Specificati	on 6.8.6.a,	Item 6)
1.2.2 Site Boundary used for liquid effluents		
1.3 Prior to issuance of this procedure, these items were contained ODCM.	in Section	1 of the old
2.0 <u>SCOPE</u>		· · · · ,
2.1 This procedure is applicable to all station personnel that are qu described and referenced in this procedure.	alified to p	erform activities as
3.0 <u>REFERENCES AND COMMITMENTS</u>		
3.1 <u>References</u>	. •	· · · · · ·
3.1.1 References For BV-1 Liquid Effluent Monitor Setpoints		
3.1.1.1 Beaver Valley Power Station, Appendix I Analysis - 412; Table 2.1-3	Docket N	o. 50-334 and 50-
3.1.1.2 Beaver Valley Power Station, Appendix I Analysis - 412; Table 2.1-2	Docket N	o. 50-334 and 50-
3.1.1.3 10 CFR 20, Appendix B, (20.1001-20.2402) Table 2	2, Column	2 EC's
3.1.1.4 Calculation Package No. ERS-SFL-92-039, Isotopic Process Monitors	Efficienci	es For Unit 1 Liquid
3.1.1.5 Calculation Package No. ERS-ATL-93-021, Process Effluent Monitors	s Alarm Se	tpoints For Liquid

_

)

Be	eaver Valley Power Station	Procedure N	lumber: 1/2-ODC-2.01
Title:		Unit:	Level Of Use:
		1/2	General Skill Referenc
ODCM: LIQUI	DEFFLUENTS	Revision:	Page Number: 4 of 38
3.1.1.6	Stone and Webster Calculation Package No. U Releases and Concentrations - Expect and Des		• .
3.1.2 Ref	erences for BV-2 Liquid Effluent Monitor Setpo	ints	
3.1.2.1	10 CFR 20, Appendix B, (20.1001-20.2402) 7	Table 2, Column	2 EC's
3.1.2.2	Calculation Package No. ERS-SFL-86-026, U	Init 2 DRMS Isol	topic Efficiencies
3.1.2.3	Stone and Webster Computer Code LIQ1BB; ⁻ Pressurized Water Reactor"	"Normal Liquid	Releases From A
3.1.2.4	Calculation Package No. ERS-JWW-87-015, RQ100	Isotopic Efficien	cies For 2SGC-
3.1.2.4	The Isotopic Efficiencies for 2SGC-RQ presented in Calculation Package No. E	• •	•
3.1.2.5	Calculation Package No. ERS-WFW-87-021,	Conversion Fac	tor for 2SGC-RQ100
3.1.2.5	The Monitor Conversion Factor (CF ₁₁) the value presented in Calculation Pack		
. 3.1.2.6	Calculation Package No. ERS-ATL-93-021, F Effluent Monitors	Process Alarm Se	etpoints For Liquid
3.1.2.7	Stone and Webster Calculation Package No. I Releases and Concentrations - Expect and De		-
3.1.3 Rei	ferences used for Other Portions of this procedur	re	
3.1.3.1	NUREG-0133, Preparation of Radiological E Nuclear Power Plants	ffluent Technica	l Specifications for
3,1.3.2	NUREG-1301, Offsite Dose Calculation Man Effluent Controls for Pressurized Water Reac Supplement No. 1)		-
3.1.3.3	NUREG-0017; Calculation of Releases of Ra Liquid Effluents from PWR's, Revision 0	adioactive Materi	als in Gaseous and
3.1.3.4	Regulatory Guide 1.113; Estimating Aquatic Accidental and Routine Reactor Releases for Appendix I, April 1977		
3.1.3.5	Regulatory Guide 1.109; Calculation of Annu Releases of Reactor Effluents for the Purpose Part 50, Appendix I		

•

..

Be	aver Valley Power Station	Procedure Nu	
Title: ODCM: LIQUID		Unit: <u>1/2</u> Revision:	1/2-ODC-2.01 Level Of Use: General Skill Reference Page Number:
		2	5 of 38
3.1.3.6	Calculation Package No. ERS-ATL-83-027; Liquid for HPM-RP 6.5, Issue 3 and Later	I Waste Dos	e Factor Calculation
3.1.3.7	NUREG-0172; Age-Specific Radiation Dose Com Chronic Intake	mitment Fac	tors for a One-Year
3.1.3.8	UCRL-50564; Concentration Factors of Chemical Organisms, Revision 1, 1972	Elements in	Edible Aquatic
3.1.3.9	1/2-ADM-1640, Control of the Offsite Dose Calcu	lation Manu	al
3.1.3.10	1/2-ADM-0100, Procedure Writers Guide		
3.1.3.11	NOP-SS-3001, Procedure Review and Approval	• • •	
3.1.3.12	1/2-ODC-3.03, ODCM: Controls for RETS and R	EMP Progra	ms
3.1.3.13	CR 02-06174, Tracking of Activities for Unit 1 RC Implementation. CA-014, Revise ODCM Procedu and 1b) to include the addition of Zn-65 to the OD	re 1/2-ODC-	2.01 (Tables 1.1-1a
3.1.3.14	CR 03-02466, RFA-Radiation Protection Effluent Recommendation on Processing when Performing 7A/7B]. CA-02, Revise ODCM Procedure 1/2-OD show the liquid waste flow path cross-connect betw	Weekly San C-2.01, (At	nple of [1LW-TK-
	nents		۔ • • • • • • •
3.2.1 Unit	1/2 Technical Specification 6.8.6.a	: .]	
4.0 <u>RECOR</u>	DS AND FORMS	۰.	
4.1 <u>Records</u>	a de la forma de la transmission de la servicie de E	<u>.</u>	· · · ·
	calculation supporting ODCM changes shall be doc evable document (e.g.; letter or calculation package) ber.		
4.2 Forms			
4.2.1 Nor	e en la sectoria de Calendra de La forma e	•	
4.2.1 Nor			÷
	UTIONS AND LIMITATIONS		

		Procedure N	umber:
	Beaver Valley Power Station		1/2-ODC-2.01
l'itle:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: L	IQUID EFFLUENTS	Revision:	Page Number: 6 of 38
5.1.1	In Section 8.1 of this procedure, effluent monitor setpoint based on the individual Units' specific parameters, but eff analysis prior to release permit use of the total dilution flo	luent monit	tor setpoints for
	ere is a difference in alarm setpoint terminology presentatio stems of BV-1 and BV-2.	ns for the r	adiation monitoring
5.2.1	Where HIGH and HIGH-HIGH terminology are used for terminology is used for BV-2 monitors.	BV-1 moni	tors, Alert and High
5.2.2	BV-2 setpoints are presented in uCi/ml rather than cpm as due to BV-2 software which applies a conversion factor to the uCi/ml presentation is technically correct only for the the determination of the conversion factors. Therefore, B analysis prior to release will be correct for properly contro indicated uCi/ml value may differ from the actual value.	o the raw da specific iso V-2 setpoin	ata (cpm). Note that stopic mix used in st determined on
	is procedure also contains information that was previously evious BV-1 and 2 Offsite Dose Calculation Manual.	contained i	n Section 5 of the
5.3.1	In regards to this, the site boundary for liquid effluents wa	as included	in this procedure.
5.3.2	The Site Boundary for Liquid Effluents is shown in ATT.	ACHMEN	Γ E Figure 5-1.
6.0 <u>A</u>	CCEPTANCE CRITERIA	.'	
ma 19	l changes to this procedure shall contain sufficient justificat aintain the level of radioactive effluent control required by 1 0, 10 CFR 50.36a, and Appendix I to 10 CFR 50, and not a liability of effluent dose or alarm setpoint calculation. ^(3.1.3.2)	0 CFR 20. dversely in	1302, 40 CFR Part
6.1.1	All changes to this procedure shall be prepared in accordation and 1/2-ADM-1640. ^(3.1.3.9)	ance with 1	/2-ADM-0100 ^(3.1.3.10)
6.1. 2 -	All changes to this procedure shall be reviewed and appro SS-3001 ^(3.1.3.11) and 1/2-ADM-1640. ^(3.1.3.9)	oved in acc	ordance with NOP-
7.0 <u>PI</u>	REREQUISITES		
7.1 Th	ne user of this procedure shall be familiar with ODCM struc	ture and fo	rmat.
			-

IZAVEL V HILLY TOWCH STATION ILEVENTS ILEVENTS 8.0 PROCEDURE 8.1 Alarm Setpoints 8.1 Alarm Setpoint Petermination This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E.4 uCl/ml for dissolved or entrained noble gases, 0.1.1.5) The methodology described in Section 8.1.1.2 in an alternative method to be used to determine the (RM-ILW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HISP). The methodology in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCl/ml and 7.33E-3 uCl/ml. This concentration is equivalent to the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCl/ml and 9.94E+0 uCl/ml. ^{3.1.5} 8.1.1.1 BV-1 LiQUID MONITOR SETPOINTS Commonent Cooling/ Monitor Rumment BV-1 LiQUID MONITOR SETPOINTS Liquid Waste	,	Beaver Valley Power	Station	Proc	edure Numbe	,	
DDCM: LIQUID EFFLUENTS 1/2 General Skill Referent 8.0 PROCEDURE 8.1 Alarm Setpoints 8.1.1 BV-1 Monitor Alarm Setpoint Determination This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specific in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. (31.1.5) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total garma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective total garma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 9.94E+0 uCi/ml. ^(31.1.5) 8.1.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: Description Set POINTS Component Cooling/ Monitor Rumption of RM-11W-104 Southere Mister <td cols<="" th=""><th>Title:</th><th></th><th></th><th>Uni</th><th></th><th></th></td>	<th>Title:</th> <th></th> <th></th> <th>Uni</th> <th></th> <th></th>	Title:			Uni		
8.0 PROCEDURE 8.1 Alarm Setpoints 8.1.1 BV-1 Monitor Alarm Setpoint Determination This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (201001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uC/ml for dissolved or entrained noble gases. (3.1.43) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HISP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. (3.1.5) 8.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: Monitor CR HHSP HSP Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-104 3.53E+5 5.77E+5 Shower Drains Monitor Component Cooling Hx River RM-	4				1/2	General Skill Refer	
8.0 PROCEDURE 8.1 Alarm Setpoints 8.1.1 BV-1 Monitor Alarm Setpoint Determination This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCl/ml for dissolved or entrained noble gases. (3.1.1.3) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HISP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCl/ml and 7.33E-3 uCl/ml. This concentration is equivalent to the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCl/ml and 9.94E+0 uCl/ml. Cl-1.5) State Set of the Section 8.1.1 and allows for respective tritum concentrations up to 4.26E+0 uCl/ml and 9.94E+0 uCl/ml. Cl-1.5) State Set of the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS EV-1 LIQUID MONITOR SETPOINTS Com Above Background Monitor CR HHSP 5.53B+5 1.247E+5 Shower Drains Monitor RM-11W-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor <td>ODCM: LIC</td> <td>QUID EFFLUENTS</td> <td></td> <td>Rev</td> <td>isioa: I</td> <td></td>	ODCM: LIC	QUID EFFLUENTS		Rev	isioa: I		
 8.1 Alarm Setpoints 8.1.1 <u>BV-1 Monitor Alarm Setpoint Determination</u> This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. (31.15) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml.^(311.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>EV-1 LIQUID MONITOR SETPOINTS</u> <u>Liquid Waste Effluent Monitor</u> <u>RM-1LW-104</u> 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated <u>RM-1LW-104</u> 3.53E+5 3.53E+5 2.47E+5 Shower Drains Monitor <u>Component Cooling/</u> <u>RM-1RW-100</u> 2.57E+4 1.80E+4 Recirculation Spray Hx River, <u>Water Monitor</u> <u>Component Cooling Hx River</u> <u>RM-1RW-101</u> 9.02E+3 9.02E+3 6.32E+3 <u>Water Monitor</u> 	·	· · · · · · · · · · · · · · · · · · ·		<u>l</u>	21	7_of_38	
 8.1.1 <u>BV-1 Monitor Alarm Setpoint Determination</u> This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. ^{0.1.15} The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HISP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.15) 8.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47/E+5 Laundry And Contaminated RM-1LW-104 3.53E+5 8.24E+5 5.77/E+5 Shower Drains Monitor</u> <u>Component Cooling/ RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor</u> <u>Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3</u> 	8.0 (<u>PR</u>	OCEDURE		1 1 2 A			
 8.1.1 <u>BV-1 Monitor Alarm Setpoint Determination</u> This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. ^{01.15} The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>Liquid Waste Effluent Monitor RM-1LW-104</u> 3.53E+5 3.53E+5 2.47/E+5 Laundry And Contaminated RM-1LW-104 <u>State 5</u> 8.24E+5 5.77E+5 Shower Drains Monitor <u>Component Cooling/</u> RM-1RW-100 <u>Component Cooling/ RM-1RW-101</u> 9.02E+3 9.02E+3 6.32E+3 Water Monitor <u>Aux Feed Pump Bay Drain</u> RM-1DA-100 	8.1 · Ala	rm Setpoints		·			
This procedure determines the monitor HIGH-HIGH Alarm Setpoint that indicates if the concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall to used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: Image: the set of the tiquid waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 I Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 Shower Drains Monitor RM-1LW-100 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor RM-1RW-100 2.57E+4 2.52E+3 6.32E+3		i i i i i i i i i i i i i i i i i i i					
concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS BV-1 LIQUID MONITOR SETPOINTS Liquid Waste Effluent Monitor RM-1LW-116 BV-1 LIQUID MONITOR SETPOINTS Component Cooling/ RM-1LW-116 BV-1 LIQUID MONITOR SETPOINTS Component Cooling/ RM-1LW-116 BV-1 LIQUID MONITOR SETPOINTS	8.1.1	BV-1 Monitor Alarm Setpoint D	Determination				
concentration of radionuclides in the liquid effluent released from the site to unrestricted areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1. BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS Liquid Waste Effluent Monitor RM-1LW-116 R24E+5 State 5 BV-1 LIQUID MONITOR SETPOINTS Liquid Waste Effluent Monitor RM-1LW-116 R24E+5 State 5 BV-1 LIQUID MONITOR SETPOINTS Liquid Waste Efflu	•	This procedure determines the mon	itor HIGH-HIGH	Alarm Setr	oint that	indicates if the	
areas exceeds 10 times the EC's specified in 10 CFR 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases or exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. ^(3,1,15) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3,1,1,5) 8.1.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table:		-					
Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. (3.1.1.5) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. 8.1.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS Image: the total set of the liquid monitor is a state of the set of the following table: BV-1 LIQUID MONITOR SETPOINTS Image: the total set of the liquid monitor is shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS Image: the total set of the liquid is the set of the s			-				
exceeds a concentration of 2E-4 uCi/ml for dissolved or entrained noble gases. ^(3.1.5) The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>Liquid Waste Effluent Monitor</u> <u>RM-1LW-104</u> 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated <u>RM-1LW-116</u> 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor Component Cooling/ <u>RM-1RW-100</u> 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River <u>Water Monitor</u> <u>RM-1RW-101</u> 9.02E+3 9.02E+3 6.32E+3 <u>Water Monitor</u> <u>RM-1DA-100</u> 1.22E+4 8.55E+3							
The methodology described in Section 8.1.1.2 is an alternative method to be used to determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall 1 used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1 BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS EV-1 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 5.77E+5 Lower Drains Monitor RM-1LW-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River RM-1RW-100 9.02E+3 9.02E+3 6.32E+3 Water Monitor RM-1RW-101 9.02E+3 9.02E+3 6.32E+3							
determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-116 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor Component Cooling/ RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3	· · · · · · · ·						
determine the (RM-1LW-104 or RM-1LW-116) monitor HIGH-HIGH Alarm Setpoint (HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>cpm Above Background</u> <u>Monitor CR HHSP HSP Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5</u> Laundry And Contaminated RM-1LW-116 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor Component Cooling/ RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3	•	The methodology described in Sect	ion 8.1.1.2 is an a	alternative n	nethod to	be used to	
(HHSP). The methodology in Section 8.1.1.2 may be used for any batch release and shall I used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS Idiquid Waste Effluent Monitor RM-1LW-104 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-116 8.24E+5 S.77E+5 Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor RM-1RW-100 2.57E+4 1.20E+3 9.02E+3 9.02E+3 9.02E+3 9.02E+3 8.55E+3							
used when the respective total gamma activity concentration of the liquid effluent prior to dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS BV-1 LiQUID MONITOR SETPOINTS Image: state of the liquid monitor is shall be set at the values listed in the following table: BV-1 LiQUID MONITOR SETPOINTS BV-1 LiQUID MONITOR SETPOINTS Image: state of the liquid monitor is shall be set at the values listed in the following table: BV-1 LiQUID MONITOR SETPOINTS Image: state of the liquid monitor is shall be set at the values listed in the following table: State of the liquid monitor is equivalent to the set of the liquid waste Effluent Monitor is equivalent to the set of		-	•			•	
dilution exceeds 3.14E-3 uCi/ml and 7.33E-3 uCi/ml. This concentration is equivalent to the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>cpm Above Background</u> <u>HHSP</u> HSP <u>Liquid Waste Effluent Monitor</u> RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-116 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor Component Cooling/ RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Recirculation Spray Hx River Water Monitor Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3			•		-		
the respective HHSP's derived in Section 8.1.1.1 and allows for respective tritium concentrations up to 4.26E+0 uCi/ml and 9.94E+0 uCi/ml. ^(3.1.1.5) 8.1.1.1 <u>BV-1 Setpoint Determination Based On A Conservative Mix</u> The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: <u>BV-1 LIQUID MONITOR SETPOINTS</u> <u>cpm Above Background</u> <u>Nonitor</u> <u>CR HHSP HSP</u> <u>Liquid Waste Effluent Monitor</u> <u>RM-1LW-104</u> 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated <u>RM-1LW-116</u> 8.24E+5 8.24E+5 5.77E+5 <u>Shower Drains Monitor</u> <u>Component Cooling/</u> <u>RM-1RW-100</u> 2.57E+4 2.57E+4 1.80E+4 <u>Recirculation Spray Hx River</u> <u>Water Monitor</u> <u>Component Cooling Hx River</u> <u>Water Monitor</u> <u>Aux Feed Pump Bay Drain</u> <u>RM-1DA-100</u> 1.22E+4 1.22E+4 8.55E+3			-		. –	-	
BV-1 Setpoint Determination Based On A Conservative Mix BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS BV-1 LIQUID MONITOR SETPOINTS Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 2.47E+5 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 2.47E+5 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 2.47E+5 Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-116 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor Component Cooling/ RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Water Monitor Mater Monitor Mater Monitor 4.44 4.55E+3 Mater Monitor RM-1DA-100 1.22E+4 4.55E+3							
BV-1 Setpoint Determination Based On A Conservative Mix The Alarm Setpoints for the liquid monitors shall be set at the values listed in the following table: BV-1 LIQUID MONITOR SETPOINTS Com Above Background Monitor CR HHSP Liquid Waste Effluent Monitor RM-1LW-104 3.53E+5 3.53E+5 2.47E+5 Laundry And Contaminated RM-1LW-116 8.24E+5 8.24E+5 5.77E+5 Shower Drains Monitor RM-1RW-100 2.57E+4 2.57E+4 1.80E+4 Water Monitor RM-1RW-101 9.02E+3 6.32E+3 Water Monitor RM-1DA-100 1.22E+4 1.22E+4 8.55E+3						e tritium	
BV-1 LIQUID MONITOR SETPOINTSCpm Above BackgroundMonitorCRHHSPLiquid Waste Effluent MonitorRM-1LW-1043.53E+53.53E+52.47E+5Laundry And Contaminated Shower Drains MonitorRM-1LW-1168.24E+58.24E+55.77E+5Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Mater MonitorRM-1DA-1001.22E+41.22E+48.55E+3	· t	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n	ection 8.1.1.1 and nl and 9.94E+0 u	l allows for : Ci/ml. ^(3.1.1.5)	respectiv)	e tritium	
MonitorCRHHSPHSPLiquid Waste Effluent MonitorRM-1LW-1043.53E+53.53E+52.47E+5Laundry And ContaminatedRM-1LW-1168.24E+58.24E+55.77E+5Shower Drains MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Component Cooling Hx River Water MonitorRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	the respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> .1 The Alarm Setpoints for the	ection 8.1.1.1 and nl and 9.94E+0 u <u>ion Based On A</u>	l allows for Ci/ml. ^{(3.1.1.5} <u>Conservat</u> i	respective		
MonitorCRHHSPHSPLiquid Waste Effluent MonitorRM-1LW-104 $3.53E+5$ $3.53E+5$ $2.47E+5$ Laundry And ContaminatedRM-1LW-116 $8.24E+5$ $8.24E+5$ $5.77E+5$ Shower Drains MonitorComponent Cooling/RM-1RW-100 $2.57E+4$ $2.57E+4$ $1.80E+4$ Recirculation Spray Hx RiverWater MonitorRM-1RW-101 $9.02E+3$ $9.02E+3$ $6.32E+3$ Water MonitorRM-1RW-100 $1.22E+4$ $1.22E+4$ $8.55E+3$	8.1.1	the respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table:	ection 8.1.1.1 and nl and 9.94E+0 u <u>ion Based On A</u> liquid monitors	l allows for Ci/ml. ^{(3.1.1.5} <u>Conservati</u> shall be set	respective ive Mix at the val		
Liquid Waste Effluent MonitorRM-1LW-1043.53E+53.53E+52.47E+5Laundry And Contaminated Shower Drains MonitorRM-1LW-1168.24E+58.24E+55.77E+5Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Mater MonitorRM-1RW-1001.22E+41.22E+48.55E+3	8.1.1	 the respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n BV-1 Setpoint Determinat The Alarm Setpoints for the following table: 	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S	l allows for Ci/ml. ^(3.1.1.5) Conservati shall be set	respective ive Mix at the val	ues listed in the	
Laundry And Contaminated Shower Drains MonitorRM-1LW-1168.24E+58.24E+55.77E+5Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Aux Feed Pump Bay DrainRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	 the respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n BV-1 Setpoint Determinat The Alarm Setpoints for the following table: 	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors	allows for Ci/ml. ^(3.1.1.5) Conservation Shall be set SETPOINTS	respective ive Mix at the val	ues listed in the e Background	
Shower Drains MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1002.57E+41.80E+4Component Cooling Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Aux Feed Pump Bay DrainRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: BV-1 LIQU	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS	respective ive Mix at the val om Abov HHSF	ues listed in the e Background HSP	
Component Cooling/ Recirculation Spray Hx River Water MonitorRM-1RW-1002.57E+42.57E+41.80E+4Component Cooling Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Aux Feed Pump Bay DrainRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: BV-1 LIQU Liquid Waste Effluent Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5	respective ive Mix at the val om Abov HHSF 3.53E+:	ues listed in the e Background HSP 5 2.47E+5	
Recirculation Spray Hx River Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Component Cooling Hx River Water MonitorRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5	respective ive Mix at the val om Abov HHSF 3.53E+:	ues listed in the e Background HSP 5 2.47E+5	
Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Component Cooling Hx River Water MonitorRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-116	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5	
Water MonitorRM-1RW-1019.02E+39.02E+36.32E+3Component Cooling Hx River Water MonitorRM-1DA-1001.22E+41.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-116 RM-1RW-100	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5	
Water MonitorRM-1DA-1001.22E+48.55E+3Aux Feed Pump Bay DrainRM-1DA-1001.22E+48.55E+3	8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/n .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-116 RM-1RW-100	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5	
Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-116 RM-1RW-100	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5 4 1.80E+4	
Aux Feed Pump Bay Drain RM-1DA-100 1.22E+4 1.22E+4 8.55E+3	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-116 RM-1RW-100	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5 4 1.80E+4	
Monitor	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100	allows for Ci/ml. ^(3.1.1.5) Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+	ues listed in the e Background HSP 5 2.47E+5 5 5.77E+5 4 1.80E+4	
	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100	l allows for Ci/ml. ^(3.1.1.5) Conservati shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4 9.02E+3	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+ 9.02E+	ues listed in the e Background 	
	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100	l allows for Ci/ml. ^(3.1.1.5) Conservati shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4 9.02E+3	ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+ 9.02E+	ues listed in the e Background - HSP 5 2.47E+5 5 5.77E+5 4 1.80E+4 3 6.32E+3	
A THE SETTIMATE VIEW AND A WALLED WALLED WALLED WALLED WALLED WATCH THE THE MUNICIPALITY AND THE PROPERTY AN	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor Aux Feed Pump Bay Drain Monitor	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100 RM-1RW-101 RM-1DA-100	l allows for Ci/ml. ^(3.1.1.5) Conservati shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4 9.02E+3 1.22E+4	respective ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+ 9.02E+ 1.22E+	ues listed in the e Background - HSP 5 2.47E+5 5 5.77E+5 4 1.80E+4 3 6.32E+3 4 8.55E+3	
The setpoints for RM-1LW-104 and RM-1LW-116 are based on the following condition The setpoint bases for RM 1RW 100 and RM 1DA-100, can be found in Calculation	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor Aux Feed Pump Bay Drain Monitor The setpoints for RM-1LW-10	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors JID MONITOR S Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100 RM-1RW-101 RM-1RW-101 A and RM-1LW-	1 allows for Ci/ml. Ci/ml. Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4 9.02E+3 1.22E+4 116 are base	respective ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+ 9.02E+ 1.22E+ d on the	ues listed in the e Background 	
The setpoints for RM-1LW-104 and RM-1LW-116 are based on the following condition The setpoint bases for RM-1RW-100 and RM-1DA-100, can be found in Calculation Package ERS-ATL-93-021. ^(3.1.1.5)	t 8.1.1	he respective HHSP's derived in Seconcentrations up to 4.26E+0 uCi/m .1 <u>BV-1 Setpoint Determinat</u> The Alarm Setpoints for the following table: <u>BV-1 LIQU</u> Liquid Waste Effluent Monitor Laundry And Contaminated Shower Drains Monitor Component Cooling/ Recirculation Spray Hx River Water Monitor Component Cooling Hx River Water Monitor Aux Feed Pump Bay Drain Monitor The setpoints for RM-1LW-10 The setpoint bases for RM-1R	ection 8.1.1.1 and nl and 9.94E+0 u ion Based On A liquid monitors Monitor RM-1LW-104 RM-1LW-100 RM-1RW-100 RM-1RW-101 RM-1RW-101 4 and RM-1LW- W-100 and RM-1	1 allows for Ci/ml. Ci/ml. Conservation shall be set SETPOINTS CR 3.53E+5 8.24E+5 2.57E+4 9.02E+3 1.22E+4 116 are base	respective ive Mix at the val om Abov HHSF 3.53E+ 8.24E+ 2.57E+ 9.02E+ 1.22E+ d on the	ues listed in the e Background 	

Source terms given in ATTACHMENT A Table 1.1-1a. These source terms (withou Zn-65) have been generated from the GALE Computer Code, as described in NUREG-0017.^(3.1.3.3) The inputs to GALE are given in 1/2-ODC-3.01 Appendix B.

Bea	ver Valley Power Station	Procedure Nu	
litle:		Unit:	1/2-ODC-2.01
		1/2 Revision:	General Skill Reference Page Number:
ODCM: LIQUID	EFFLUENTS	2	8 of 38
	The Zn-65 source term was generated via Calc 021. ^(3.1.1.5, 3.1.3.13)	culation Package	No. ERS-ATL-83-
•	Dilution water flow rate of $22,800 \text{ gpm} = (15, 100)$	000 gpm BV-1 +	- 7,800 gpm BV-2).
•	Discharge flow rate prior to dilution of 35 gpm (RM-1LW-104).	n for the Liquid	Waste Effluent Monitor
•	Discharge flow rate prior to dilution of 15 gpm Shower Drains Monitor (RM-1LW-116).	n for the Laundr	y and Contaminated
oper	above setpoints for (RM-1LW-104 and RM-11 rating conditions resulting in changes in the disc ows:	•	
HH	$SP = \frac{542F}{f}$		[1.1(1)-1]
wł	nere:		
H	HSP = Monitor HIGH-HIGH Alarm Setpoint ab	ove background	(ncpm).
. 54 54 54	2 = 3.53E+5 ncpm x 35 gpm ÷ 22,800 gpm (RM-1LW-104)	al flow conditions:
F	= Dilution water flow rate (gpm), BV-1 plu Rate (not including release through the E		
f	= Discharge flow rate prior to dilution (gpr	n).	
8.1.1.1.1	BV-1 Mix Radionuclides		
	The "mix" (radionuclides and composition as follows:	on) of the liquid	effluent was determined
	• The liquid source terms that are represented of the radionuclides in the effluent fr	urce terms are th	e radioactivity levels
	• The fraction of the total radioactivity radionuclide "i" (S _i) for each individ was determined as follows:	-	- 7
	$S_i = A_i$		- [1.1(1)-2]
	ΣA_i	•	· ·

Beave	r Valley Power Sta	ition	Procedure No	umber: 1/2-ODC-2.01
Title:			Unit:	Level Of Use:
			1/2 Revision:	General Skill Refer
ODCM: LIQUID EFF		<u></u>	2	9 of 38
	where:		· .	
,	A _i = Annual release ATTACHMEN	of radionuclide "i" NT A Table 1.1-1a.	(Ci/yr) in th	ne liquid effluent fro
8.1.1.1.2	BV-1 Maximum Accepta	ble Concentration (All Radionu	clides)
	The maximum acceptable radionuclides in the liquid			
-	$C_{t=} F_{}$			[1.1(1)-3]
	$f \Sigma \underline{S_i}$ i OEC _i			
l Nacional de tratilitations de la composition Production de la composition de la comp	where:			
1011 - 1011 - 1012 - 10	F = Dilution water flo			
· · · ·	Blowdown Rate (Structure).	not including releas	e through th	e Emergency Outfa
	= 22,800 gpm = (15	5,000 gpm BV-1 + 7	,800 gpm E	3V-2)
	f = Maximum accept	able discharge flow	rate prior to	o dilution (gpm).
an aite sa sa sa	= 35 gpm for Liqui	d Waste Effluent M	onitor (RM	-1LW-104).
n Antina antina antina Antina antina	= 15 gpm for Laune 1LW-116).	lry and Contaminate		Drains Monitor (RM
· · · · · · · · · · · · · · · · · · ·	OEC _i = The ODCM liqui (uCi/ml) from 'AT		tion limit fo able 1.1-1a.	The OEC is set at
·····	2 EC values.	CrK 20, Appendix	• • ···`	•
an a	S _i = The fraction of to Equation [1.1(1)-	•	ributed to ra	dionuclide "i", fron •
8.1.1.1.3	BV-1 Maximum Accepta	ble Concentration (Individual I	Radionuclide)
	The maximum acceptable "i" in the liquid effluent p	•	•	•
	$C_i = S_i C_t$	•		[1.1(1)-4]
8.1.1.1.4	BV-1 Monitor Count Rat	e		-

Beave	r Valley Power Station	Procedure No	1/2-ODC-2.01
litle:		Unit:	Level Of Use:
······································		1/2 Revision:	General Skill Reference
DDCM: LIQUID EFF			Page Number: 10 of 38
	The calculated monitor count rate (ncpm) radionuclides; (CR) was determined by:	above backgro	und attributed to the
	$CR = \Sigma C_i E_i$ i		[1.1(1)-5]
	where:		. ·
	E _i = Detection efficiency of the mon from ATTACHMENT A Table Calculation Package ERS-SFL-	1.1-1a. If not	• •
8.1.1.1.5	BV-1 Monitor HHSP		
	The monitor HIGH-HIGH Alarm Setpoint set at the CR value. Since only one tank c of this value is not necessary to compensa source.	an be released	at a time, adjustment
8.1.1.2 <u>BV</u> -	1 Setpoint Determination Based On Anal	ysis Prior To	Release
. the HIC HIC Mor	following method applies to liquid releases maximum acceptable discharge flow rate pri iH-HIGH Alarm Setpoint based on this flow nitor (RM-1LW-104) and the Laundry and C 4-1LW-116) during all operational condition	or to dilution a rate for the Li ontaminated S	and the associated quid Waste Effluent
* resu sput	monitor alarm setpoint is set slightly above of the concentration of gamma emitting rious alarms. To compensate for this increase wable discharge flow rate is reduced by the states	g radionuclide is in the monit	s in order to avoid
or b	en the discharge flow rate is limited by the rate is diministrative selection rather than the all vity concentration, the alarm setpoint will be excess dilution factor provided.	owable flow ra	te determined form
8.1.1.2.1	BV-1 Maximum Acceptable Discharge Fl	ow Rate	
· .	The maximum acceptable discharge flow determined by:	rate (f) prior to	o dilution (gpm) is
	$f = \frac{F}{1.25 \Sigma \frac{C_i}{i \text{ OEC}_i}}$		[1.1(1)-6]
	where:		

.

Beaver Valley Power Station	Procedure N	
Tide:	Unit: <u>1/2</u> Revision:	1/2-ODC-2.01 Level Of Use: General Skill Reference Page Number:
ODCM: LIQUID EFFLUENTS		11 of 38
F = Dilution water flow rate, BV-1 Blowdown (gpm).	plus BV-2	Cooling Tower
The dilution water flow rate ma tower blowdown flow from bo structure (but excluding emergy simultaneous liquid discharges	th units exit ency outfall	ing the discharge structure flow) when
C _i = Radioactivity concentration of effluent prior to dilution (uCi/r effluent to be released.		
1.25 = A factor to prevent spurious al mixture of radionuclides which		•
OEC _i = The ODCM liquid effluent con (uCi/ml) from ATTACHMEN at 10 times the new 10 CFR 20 Table 2, Col. 2 EC values.	T A Table 1	.1-1a. The OEC is set
8.1.1.2.2 BV-1 Monitor Count Rate	•	
The calculated monitor count rate (ncpm) aboration and the calcula	ove backgro	und attributed to the
$CR = 1.25 \Sigma C_i E_i$	• • • • • • • • • • • • • • • • • • •	[1.1(1)-7]
• where:	4 B	: - ;
E _i = The detection efficiency of the monit (cpm/uCi/ml) from ATTACHMENT there, from Calculation Package ERS	A Table 1.	1-1a. If not listed
1.25 = A factor to prevent spurious alarms c of radionuclides which affect the mo		•
8.1.1.2.3 BV-1 Monitor HHSP		•
The liquid effluent monitor HIGH-HIGH Ala (ncpm) should be set at the CR value adjuste provided as defined in the following equation	d by any ex	
$HHSP = CR \frac{f}{f}$	•	[1.1(1)-8]
where:		•

1

the second second

:

× ,	- Kea	aver Valley Power Stati	on	Procedure Nu	•	
tle:				Unit:	Level Of Use:	1
, ,			•	1/2 ·	General Skil	l Reference
DCM: L	IQUID	EFFLUENTS		Revision: 2	Page Number: 12 of	f 38
		HSP= Monitor HIGH-	HIGH Alarm Set	point above		
		CR = Calculated mon	itor count rate (nc	pm) from e	quation [1.1([1)-7].
		f = Maximum acce determined by	eptable discharge f equation [1.1(1)-6		ior to dilutio	n
8.1.2	<u>BV-2</u>		e reduced value of administrative sele	f may be d		r the
		procedure determines the monitor H entration of radionuclides in the liqu	~	ed from the		tricted
· · ·	areas Table	exceeds 10 times the EC's specified 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml	er than dissolved o	or entrained	noble gases	or
	areas Table excee The r deter Section radio This in Se setpo	exceeds 10 times the EC's specified 2, Column 2 for radionuclides other	er than dissolved of for dissolved or er .1.2.2 is an alterna HGH Alarm Setpo h release and shal effluent prior to d nitor response and m concentration of	or entrained ntrained not ative metho bint (HSP). l be used w ilution exce l HIGH Ala f up to 2.16	d to be used the method hen the total eds 1.14E-3 rm Setpoint E+0 uCi/ml.	or 2.6) to ology in gamma uCi/ml. derived The
8.1.	areas Table excee The r deter Section radio This in Se setpo	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiur int was obtained by use of a conver	er than dissolved of for dissolved or er .1.2.2 is an alterna HGH Alarm Setpo h release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m	d to be used The method hen the total eeds 1.14E-3 rm Setpoint E+0 uCi/ml. I/cpm determ	or 2.6) to ology in gamma uCi/ml. derived The
8.1.	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiur int was obtained by use of a conver uclide mix. ^(3.1.2.6)	er than dissolved of for dissolved or en .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 ased On A Conse	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint E+0 uCi/ml. l/cpm determ	or 2.6) to ology in gamma uCi/ml. derived The nined for
8.1.	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiun int was obtained by use of a conver uclide mix. ^(3.1.2.6) <u>BV-2 Setpoint Determination Ba</u> The HIGH Alarm Setpoint for the the following Table:	er than dissolved of for dissolved or er .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 ased On A Conse liquid monitors sl	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m rvative Mi hall be set a	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint E+0 uCi/ml. I/cpm determ	or 2.6) to ology in gamma uCi/ml. derived The nined for
	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiun int was obtained by use of a conver uclide mix. ^(3.1.2.6) <u>BV-2 Setpoint Determination Ba</u> The HIGH Alarm Setpoint for the the following Table:	er than dissolved of for dissolved or en .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 ased On A Conse	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m rvative Min hall be set a	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint E+0 uCi/ml. I/cpm determ	or 2.6) to lology in gamma uCi/ml. derived The nined for
8.1.	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiun int was obtained by use of a conver uclide mix. ^(3.1.2.6) <u>BV-2 Setpoint Determination Ba</u> The HIGH Alarm Setpoint for the the following Table:	er than dissolved of for dissolved or er .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 ased On A Conse liquid monitors sl	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m rvative Min hall be set a	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint E+0 uCi/ml. I/cpm determ	or 2.6) to lology in gamma uCi/ml. derived The nined for
	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiun int was obtained by use of a conver uclide mix. ^(3.1.2.6) <u>BV-2 Setpoint Determination Ba</u> The HIGH Alarm Setpoint for the the following Table:	er than dissolved of for dissolved or en .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 ased On A Conse liquid monitors sl	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m rvative Min hall be set a ETPOINTS µCi/	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint of E+0 uCi/ml. l/cpm determ	or 2.6) to ology in gamma uCi/ml. derived The nined for isted in
	areas Table excee The r deter Section radio This in Se setpon the n	exceeds 10 times the EC's specified e 2, Column 2 for radionuclides other eds a concentration of 2E-4 uCi/ml is methodology described in Section 8 mine the (2SGC-RQ100) monitor H on 8.1.2.2 may be used for any batc activity concentration of the liquid concentration is equivalent to a mon ction 8.1.2.1 and allows for a tritiun oint was obtained by use of a conver uclide mix. ^(3.1.2.6) BV-2 Setpoint Determination Ba The HIGH Alarm Setpoint for the the following Table:	er than dissolved of for dissolved or en .1.2.2 is an alterna IIGH Alarm Setpo In release and shal effluent prior to d nitor response and m concentration of rsion factor of 5.6 <u>Ased On A Conse</u> liquid monitors sl <u>JID MONITOR S</u> Monitor	or entrained ntrained not ative metho bint (HSP). I be used w ilution exce I HIGH Ala f up to 2.16 IE-9 uCi/m rvative Min hall be set a ETPOINTS μ Ci/m	I noble gases ble gases. (3.1.3 d to be used The method hen the total eds 1.14E-3 rm Setpoint of E+0 uCi/ml. l/cpm determ x t the values I ml Above Ba HSP	or 2.6) to lology in gamma uCi/ml. derived The nined for isted in

The setpoint for 2SGC-RQ100 is based on the following conditions, however, the setpoint bases for 2SWS-RQ101 and 2SWS-RQ102 can be found in Calculation Package ERS-ATL-93-021.^(3.1.2.6)

.

Beaver Valley Power Station	Procedure Number:		
Title:	Unit:	1/2-ODC-2.01 Level Of Use:	
	1/2	General Skill Reference	
ODCM: LIQUID EFFLUENTS	Revision:	Page Number:	
	1_2	<u> </u>	
 Source terms given in ATTACHMENT A Table 1 (without Zn-65) have been generated by using mo 0017. The inputs are given in 1/2-ODC-3.01. Th via Calculation Package No. ERS-ATL-93-021.⁽³⁾ 	dels and inp e Zn-65 sou	out similar to NUREG	
• Dilution water flow rate of $22,800 \text{ gpm} = (15,000 \text{ gpm})$	gpm BV-1	+ 7,800 gpm BV-2).	
• Discharge flow rate prior to dilution of 80 gpm fo Monitor (2SGC-RQ100).	r the Liquid	Waste Effluent	
 A software conversion factor of 5.61E-9 uCi/ml/c Effluent Monitor (2SGC-RQ100).^(3.1.2.6) 	pm associat	ed with Liquid Waste	
The above setpoint for (2SGC-RQ100) can be varied tresulting in the discharge and dilution flow rates as fol		ual operating condition	
$HSP = \frac{4.00E-6F}{f}$,	[1.1(2)-1]	
a en Nacional de la constante d			
where:			
HSP = Monitor HIGH Alarm Setpoint (uC	i/ml) above	background.	
4.00E-6 = Proportionality constant based on n 4.00E-6 = 1.14E-3 net uCi/ml x 80			
F = Dilution water flow rate, BV-1 plus Rate (gpm).	s BV-2 Coo	ling Tower Blowdown	
f = Discharge flow rate prior to dilutio	n (gpm).	:	
8.1.2.1.1 BV-2 Mix Radionuclides			
The "mix" (radionuclides and composition) of as follows:	-	effluent was determin	
• The liquid source terms that are represent effluent were determined. Liquid source the radionuclides in the effluent from AT	terms are th	e radioactivity levels	
• The fraction of the total radioactivity in t radionuclide "i" (Si) for each individual r was determined as follows:			
$Si = \underline{Ai}$ ΣA_i	• • • • •	[1.1(2)-2]	
•		• ,	

•

Beave	er Valley Power Station	Procedure N	umber: 1/2-ODC-2.01
CM: LIQUID EFFLUENTS		Unit: Level Of Use: 1/2 General Skill Refere Revision: Page Number:	
<u> </u>	where:		<u>14 of 38 ·</u>
	Ai =Annual release of radionuclide ATTACHMENT A Table 1.1-	· · ·	ne liquid effluent from
8.1.2.1.2	BV-2 Maximum Acceptable Concentration	on (All Radionu	iclides)
	The maximum acceptable total radioactiv radionuclides in the liquid effluent prior t	•	• •
-	$C_{t} = \underline{F}$ $f \Sigma_{i} \frac{S_{i}}{OEC_{i}}$		[1.1(2)-3]
••	where:		
	F = Dilution water flow rate (gpm), B Blowdown Rate (not including rele Structure).	-	-
	= 22,800 gpm = (15,000 gpm BV-1	+ 7,800 gpm B	V-2).
•	f = Maximum acceptable discharge fl	ow rate prior to	dilution (gpm).
	= 80 gpm for Liquid Waste Process	Effluent Monit	or (2SGC-RQ100).
·	OECi = The ODCM liquid effluent concer (uCi/ml) from ATTACHMENT A times the new 10 CFR 20, Append 2 EC values.	Table 1.1-1b.	The OEC is set at 10
	S_i = The fraction of total radioactivity Equation [1.1(2)-2].	attributed to rad	lionuclide "i", from
** 8.1.2.1.3	BV-2 Maximum Acceptable Concentration	on (Individual l	Radionuclide)
	The maximum acceptable radioactivity c "i" in the liquid effluent prior to dilution		
	$C_i = S_i C_t$		[1.1(2)-4]
8.1.2.1.4	BV-2 Monitor Display Value		
	The calculated monitor Display Value (u the radionuclides; (DV), was determined		ackground attributed
	$DV = 5.61E-9 \Sigma_i C_i E_i$		[1.1(2)-5]

Bea	ver Valley Power Station	Procedure Nu	mber: 1/2-ODC-2.01
Title: ODCM: LIQUID E		Unit: <u>1/2</u> Revision: 2	Level Of Use: General Skill Reference Page Number: 15 of 38
	where:		:
	5.61E-9 = Conversion factor (uCi/r the source term mix.	nl/cpm), an ave	rage determined for
tan ya shi waxa a shi shi shi	E _i = Detection efficiency of t (cpm/uCi/ml) from ATT listed there, from Calcul 026. ^(3.1.2.2)	ACHMENT A	Table 1.1-1b. If not
8.1.2.1.5	BV-2 Monitor HSP		•
	The monitor HIGH Alarm Setpoint above the DV value.	background (u	Ci/ml) should be set a
8.1.2.2	BV-2 Setpoint Determination Based On Ana	lysis Prior To I	Release
···· 1	The following method applies to liquid releases the maximum acceptable discharge flow rate pr HIGH Alarm Setpoint based on this flow rate fo (2SGC-RQ100) during all operational condition	ior to dilution a or the Liquid W	nd the associated
	The monitor alarm setpoint is set slightly above reading that results from the concentration of ga to avoid spurious alarms. To compensate for th setpoint, the allowable discharge flow rate is rea	amma emitting i is increase in th	radionuclides in order e monitor alarm
	When the discharge flow rate is limited by the r or by administrative selection rather than the all activity concentration, the alarm setpoint will b the excess dilution factor provided.	lowable flow rat	te determined form
8.1.2.2.1	BV-2 Maximum Acceptable Discharge F	low Rate	:
* ** *	The maximum acceptable discharge flow determined by:	rate (f) prior to	dilution (gpm) is
	$f = \frac{F}{1.25 \sum_{i} \frac{C_{i}}{OEC_{i}}}$	х ² .	[1.1(2)-6]
	where:	· .	:
	F = Dilution water flow rate, B Blowdown (gpm).	V-1 plus BV-2	Cooling Tower

-- -

:

Beave	r Vallev Po	wer Station	Procedure Nu	
Title:			Uait:	1/2-ODC-2.01 Level Of Use:
	TITATO		1/2 Revision:	General Skill Reference Page Number:
ODCM: LIQUID EFF	LUEN15		2	16 of 38
	1 5	The dilution water flow rate ma cower blowdown flow from both structure (but excluding emerge simultaneous liquid discharges f administratively prohibited.	n units exit ncy outfall	ing the discharge structure flow) when
		Radioactivity concentration of r effluent prior to dilution (uCi/m effluent to be released.		.
-		A factor to prevent spurious ala mixture of radionuclides which		•
		The ODCM liquid effluent cond "i" (uCi/ml) from Table 1.1-1b. new 10 CFR 20, Appendix B (2 ATTACHMENT A Table 2, Co	The OEC 0.1001-20.	is set at 10 times the 2402)
8.1.2.2.2	BV-2 Monitor	Display Value		
		monitor Display Value (uCi/ml les; (DV) is determined by:) above ba	ckground attributed t
	DV = (1.25) (5	5.61E-9) Σ _i C _i E _i		[1.1(2)-7]
	where:			
	E _i =	The detection efficiency of th (cpm/uCi/ml) from ATTACH listed there, from Calculation 026. ^(3.1.2.2)	IMENT A	Table 1.1-1b. If not
: ++	1.25 =	A factor to prevent spurious the mixture of radionuclides response.		•
	5.61E-9	= Conversion factor (uCi/ml/c) the source term mix.	om), an ave	erage determined for
8.1.2.2.3	BV-2 Monitor	HSP		
	should be set a	uent monitor HIGH Alarm Setp at the DV value adjusted by any he following equation:		
	$HSP = DV \underline{f}$			[1.1(2)-8]

• .

	Beaver Valley Power Station		eaver Valley Power Station Procedure Number: 1/2-ODC-2.01		Procedure	
Title: ODCM: LIQUID EFFLUENTS			Unit: 1/2	Level Of Use: General Skill Refere		
ODCM: LIQUII) EFFLUENTS		Revision:	Page Number: 17 of 38		
	where: HSP = Monitor HIGI		bove backgroun			
	DV = Calculated motion [1.1(2)-7].	nitor concentration	reading (uCi/m	l) from equation		
	f = Maximum acc equation [1.1(low rate prior to	dilution determined b		
•				ined for the discharge ations or administrativ		
8.2 <u>Compli</u>	ance With 10 CFR 20 EC L	imits (ODCM_CO	NTROL 3.11.1	.1)		
	ch <u>Releases</u>	•••••	•			
8.2.1.1	Pre-Release					
	samples, at least two tank shall be recirculated throu		tors. This will t	be accomplished by		
	recirculating the tank cont ATTACHMENT B Table	1.2-1a and 1.2-1b.	BV-1 and BV-2			
	ATTACHMENT B Table with ODCM Control 3.11 The activity of the various accordance with 1/2-ODC flow to obtain the concent the following equation:	1.2-1a and 1.2-1b. .1.1 in the followin radionuclides in th -3.03, Table 4.11-1 ration at the unrest	BV-1 and BV-2 g manner: he batch release, , is divided by t ricted area. This	2 will show compliand determined in he minimum dilution s calculation is shown		
• • • • • • • • • • • • • • • • • • •	ATTACHMENT B Table with ODCM Control 3.11 The activity of the various accordance with 1/2-ODC flow to obtain the concent the following equation: $Conc_i = \frac{C_i R}{MDF}$	1.2-1a and 1.2-1b. 1.1 in the followin radionuclides in the -3.03, Table 4.11-1 tration at the unrest	BV-1 and BV-2 g manner: he batch release, , is divided by t ricted area. This	2 will show compliand determined in he minimum dilution		
• • • • • • • • • • • • • • • • • • •	ATTACHMENT B Table with ODCM Control 3.11 The activity of the various accordance with 1/2-ODC flow to obtain the concent the following equation: $Conc_i = \frac{C_i R}{MDF}$ where:	1.2-1a and 1.2-1b. 1.1 in the followin radionuclides in the -3.03, Table 4.11-1 tration at the unrest	BV-1 and BV-2 g manner: he batch release, , is divided by t ricted area. This	2 will show compliand determined in he minimum dilution s calculation is shown [1.2-1]		
• • • • • • • • • • • • • • • • • • •	ATTACHMENT B Table with ODCM Control 3.11 The activity of the various accordance with 1/2-ODC flow to obtain the concent the following equation: $Conc_i = \frac{C_i R}{MDF}$ where: $Conc_i = Concentration$	1.2-1a and 1.2-1b. 1.1 in the followin radionuclides in the -3.03, Table 4.11-1 tration at the unrest	BV-1 and BV-2 g manner: he batch release, , is divided by t ricted area. This	2 will show compliand determined in he minimum dilution s calculation is shown [1.2-1] icted area (uCi/ml).		
	ATTACHMENT B Table with ODCM Control 3.11 The activity of the various accordance with 1/2-ODC flow to obtain the concent the following equation: $Conc_i = \frac{C_i R}{MDF}$ where: $Conc_i = ConcentrationConc_i = ConcentrationConc_i = ConcentrationC_i = Concentration(uCi/ml).$	1.2-1a and 1.2-1b. .1.1 in the followin radionuclides in the -3.03, Table 4.11-1 tration at the unrestress and a stress of the batch (gpm)	BV-1 and BV-2 g manner: he batch release, , is divided by t ricted area. This "i" at the unrestr "i" in the potenti	2 will show compliand determined in he minimum dilution s calculation is shown [1.2-1] icted area (uCi/ml).		

Ĵ

,

;

* *

. . . .

B	eaver Valley Power Station	Procedure N	umber: 1/2-ODC-2.01
îtle:	· · · · · · · · · · · · · · · · · · ·	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: LIQUI	DCM: LIQUID EFFLUENTS		Page Number: 18 of 38
	The projected concentrations in the unrestricted Before a release is authorized, Equation [1.2-2]	-	ared to the OEC's.
	Σ_i (Conc _i /OEC _i) < 1		[1.2-2]
· .	where:		
	OEC _i = The ODCM effluent concentration lin ATTACHMENT A Table 1.1-1a and new 10 CFR 20, Appendix B, (20.10 values. ^(3.1.1.3, 3.1.2.1)	l 1.1-1b. The O	EC is set at 10 times the
8.2.1.2	Post-Release	•	
	Following release from the batch tank, the Post calculated in the following manner:	Dose Correction	on Factor will be
	$PDCF = \frac{(VA_t)/(DFA)}{(VI_t)/(DFI)}$		[1.2-3]
	where:		
÷	PCDF = Post Dose Correction Factor	or.	
	VA_t = Actual Volume of tank rele	ased (gal).	
	DFA = Actual Dilution Flow durin	g release (gpm)	•
•	VI_t = Initial Volume authorized f	or release (gal).	
	DFI = Initial Dilution Flow author	rized for release	: (gpm).
· -+++=	The concentration of each radionuclide followic calculated in the unrestricted area in the follow Correction Factor shown in equation [1.2-3] is	ing manner who	
,	The average activity of radionuclide "i" during by the actual dilution flow during the period of the unrestricted area. This calculation is show	release to obtai	in the concentration in
	$Conc_{ik} = \frac{C_{ik} V_{tk}}{ADF_{k}}$		[1.2-4]
	where:		

1_

where:

 $Conc_{ik}$ = The concentration of radionuclide "i" (uCi/ml) at the unrestricted area, during the release period of time k.

;

	Beaver Valley		Unit:	1/2-ODC-2.01 Level Of Use:
			1/2	General Skill Refere
ODCM: LIQU	JID EFFLUENTS		Revision:	Page Number: 19 of 38
. NOTE:	-	is from an isolated well-r etween average and peak al.		•
	C _{ik} =	Concentration of radion time period k.	uclide "i" (uCi/m	l) in batch release duri
in a fright fright (1	V _{tk} =	Volume of Tank release	ed during time per	iod k (gal).
		Actual volume of Dilut k (gal).	ion Flow during th	ne time period of relea
 V = Metal (Section 2) 	To show complia must be satisfied:	nce with ODCM CONTR	OL 3.11.1.1, the f	ollowing relationship
	Σ _i (Conc _{ik} /OEC _i)	≤1 ::	· · ·	[1.2-5]
8.2.2 C	Continuous Releases		· .	
a	gain be satisfied.			quation [1.2-5] must
8.3 <u>Com</u> BV-1	bliance With 10 CFR and 2 utilize the conc	50 Dose Limits (ODCM ept of a shared liquid radi	oactive waste syst	11.1.2 And 3.11.1.3) em according to
8.3 <u>Comr</u> BV-1 NUR result	bliance With 10 CFR and 2 utilize the conc EG 0133. ^(3.1,3.1) This j ing effluent release ca		oactive waste syst id radwaste for pr	11.1.2 And 3.11.1.3) em according to ocessing. Since the
8.3 <u>Com</u> BV-1 NURI result efflue	and 2 utilize the conc EG 0133. ^(3.1,3.1) This j ing effluent release ca nt releases are allocat	ept of a shared liquid radi permits mixing of the liqu nnot accurately be ascribe	oactive waste syst id radwaste for pr d to a specific rea	11.1.2 And 3.11.1.3) em according to ocessing. Since the
8.3 <u>Comp</u> BV-1 NURI result efflue 8.3.1 <u>C</u> • T e o c c	and 2 utilize the conc EG 0133. ^(3.1,3.1) This p ing effluent release ca nt releases are allocat Cumulation Of Doses The dose contribution ach batch release duri organ doses will be ma alendar year to date.	ept of a shared liquid radi permits mixing of the liqu nnot accurately be ascribe ed as defined below. (ODCM CONTROL 3.) from the release of liquid ng the month and a cumul intained for each calendar The dose contribution wil	oactive waste syst id radwaste for pr d to a specific rea (11.1.2) effluents will be c ative summation of month, current c	11.1.2 And 3.11.1.3) em according to ocessing. Since the ctor unit, the treated alculated monthly for of the total body and alendar quarter, and th
8.3 <u>Comp</u> BV-1 NURI result efflue 8.3.1 <u>C</u> • T e o c c	bliance With 10 CFR and 2 utilize the conc EG 0133. ^(3,1,3,1) This p ing effluent release can ant releases are allocat Cumulation Of Doses The dose contribution is ach batch release duri organ doses will be ma alendar year to date. The quation: $D_{\tau} = UAF \Sigma Ai\tau \Sigma^{m} \Delta t_{H}$ i k=1	ept of a shared liquid radi permits mixing of the liqu nnot accurately be ascribe ed as defined below. (ODCM CONTROL 3.) from the release of liquid ng the month and a cumul intained for each calendar The dose contribution will $Ci_k F_k$	oactive waste syst id radwaste for pr d to a specific rea (11.1.2) effluents will be c ative summation of month, current c	11.1.2 And 3.11.1.3) em according to ocessing. Since the ctor unit, the treated alculated monthly for of the total body and alendar quarter, and th
8.3 <u>Comp</u> BV-1 NUR result efflue 8.3.1 <u>C</u> • T • T • O c • C	bliance With 10 CFR and 2 utilize the conc EG 0133. ^(3,1,3,1) This p ing effluent release can ant releases are allocat Cumulation Of Doses The dose contribution is ach batch release duri organ doses will be ma alendar year to date. The quation: $D_{\tau} = UAF \Sigma Ai\tau \Sigma^{m} \Delta t_{H}$ i k=1	ept of a shared liquid radi permits mixing of the liqu nnot accurately be ascribe ed as defined below. (ODCM CONTROL 3.) from the release of liquid ng the month and a cumul intained for each calendar The dose contribution wil	oactive waste syst id radwaste for pr d to a specific rea (11.1.2) effluents will be c ative summation of month, current c	<u>11.1.2 And 3.11.1.3</u> em according to ocessing. Since the ctor unit, the treated alculated monthly for of the total body and alendar quarter, and th ng the following

	Beaver Valley Power Station		Procedure N	
Title:	Deaver v		Unit:	<u>1/2-ODC-2.01</u> Level Of Use:
1105.	•		1/2	General Skill Reference
ODCM: LI	QUID EFFLUE	INTS	Revision:	Page Number: 20 of 38
	m ΣΔ k=1	t _k (mrem)		
:	-	length of the kth release over which C _{ik} as ases (hours).	nd F _k are ave	eraged for all liquid
		average concentration of radionuclide, "i" uent during time period Δt_k from any liquid	•	n undiluted liquid
	τfo	e site related ingestion dose commitment fa r each identified principal gamma and beta n ATTACHMENT C Table 1.3-1.		
	m = Nu	mber of releases contributing to the cumula	ative dose, I	D _t .
		t allocation factor. Provides apportionmer Normally set at 0.5 for each unit. (Must to		
	Def the unr	e near field average dilution factor for Cik fined as the ratio of the average undiluted l average flow from the site discharge struct estricted receiving waters, times 3. (3 is the mixing effect of the BV-1 and BV-2 disch	iquid waste ture during t ne site specif	flow to the product of he report period to fic applicable factor for
·	=_ (3	Waste Flow)(Dilution Water Flow)		
	dilution facto	fic applicable factor of 3 results in a conse r based upon Regulatory Guide 1.113 ^{(3.1.3.4} it specified in NUREG-0133, Section 4.3.) methodolo	nate of the near field gy and is a factor of 10
	The dose fact equation from	or A _{it} was calculated for an adult for each n NUREG-0133. ^(3.1.3.1)	isotope usin	g the following
	$Ai\tau = 1.14E$	5 (730/D _w + 21BF _i)DF _{iτ}		[1.3-2]
	where:			
	1.14E5 =	$\left[\frac{1E6 \text{ pCi}}{\text{uCi}}\right] \times \left[\frac{1E3 \text{ ml}}{\text{l}}\right] \times \left[\frac{1\text{yr}}{8760 \text{ hr}}\right]$]	
	730 =	Adult water consumption rate (liters/)	/r).	: :
×	D _w =	Far field dilution factor from the near	field area w	within 1/4 mile of the

÷

Far field dilution factor from the near field area within 1/4 mile of the release point to the potable water intake for adult water consumption.

	Beaver Va	lley Power S	tation	Pro	cedure Nu	
Title:						/2-ODC-2.01
nuc:		,		Ua	1/2	Level Of Use: General Skill Referen
				Re	vision:	Page Number:
ODCW: LIC	UID EFFLUEN	ITS		;	7	21_of 38
			· · · · · · · · · · · · · · · · · · ·			121_01_00
	21 =	Adult fish consur	nption (kg/yr).		· ·	
	$BF_i =$					rom Table A-1 of
		- , -			-	owever, if data was
	• • • •	not available from	n that reference	, it was obta	uned from	om Table 6 of UCRI
· · · · · · ·	· · ·	50564. ^(3.1.3.8)		u u	•	·
5,1 ·	• • • •		and the			
· · · · ·	• • • • • • • • • •				-	g per pCi/l) was not
	: 1	obtained from eit	her of the abov	e references	noted.	It was otained from
		IAEA Safety Seri	ies No. 57. Just	ification for	use of	his value is
	• .	•				No. ERS-ATL-83-
		027. ^(3.1.3.6)				
• •		<i>VM11</i>			-	\$
· · ·	$DF_{i\tau} =$	Dose conversion	factor for radio	nuclide "i" (for adul	ts for a particular
	Dr_{it} –					
		organ i (miem/po	(1) HOIII 1 abic.	E-II OI Reg	utator y	Guide 1.109, ^(3.1.3.5)
		NUREG-0172. ^(3.)		· · ·	-	
	Table 1.3-1.				-	•
	The far field di					lue is based on a tot
	The far field dil dilution factor of	of 600 applicable to	the Midland w	ater intake l	ocated	1.3 miles downstream
	The far field dil dilution factor of and on the oppo	of 600 applicable to osite bank from BV	the Midland w -1 and BV-2 (i.	ater intake l e., 200 = 60	ocated 0 ÷ 3).	1.3 miles downstread The total dilution
	The far field dil dilution factor of and on the opport factor of 600 re	of 600 applicable to osite bank from BV presents a conserva	the Midland w -1 and BV-2 (i. tive fully mixed	ater intake 1 e., 200 = 60 d annual ave	ocated 0 ÷ 3). crage co	1.3 miles downstread The total dilution ndition. Since the
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake	of 600 applicable to osite bank from BV presents a conserva is located on the op	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank an	ater intake l e., 200 = 60 d annual ave d is below t	ocated 0 ÷ 3). crage co he wate	1.3 miles downstread The total dilution ndition. Since the r surface, essentially
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cor	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank an to exist for the	ater intake l e., 200 = 60 d annual ave d is below t	ocated 0 ÷ 3). crage co he wate	1.3 miles downstread The total dilution ndition. Since the
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake	of 600 applicable to osite bank from BV presents a conserva is located on the op	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank an to exist for the	ater intake l e., 200 = 60 d annual ave d is below t	ocated 0 ÷ 3). crage co he wate	1.3 miles downstread The total dilution ndition. Since the r surface, essentially
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake.	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have	the Midland w -1 and BV-2 (i. tive fully mixed posite bank an to exist for the	ater intake I e., 200 = 60 d annual ave d is below the radioactive	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to
·	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake.	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have doses (from each r	the Midland w -1 and BV-2 (i. tive fully mixed posite bank an to exist for the reactor unit) for	ater intake 1 e., 200 = 60 d annual ave d is below the radioactive a calendar o	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially
•	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for	ater intake 1 e., 200 = 60 d annual ave d is below the radioactive a calendar o	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to
м. 19 <u>1</u> . м.	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have doses (from each r	the Midland w -1 and BV-2 (i. tive fully mixed posite bank an to exist for the eactor unit) for DL 3.11.1.2 as for	ater intake l e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op iditions would have doses (from each r o ODCM CONTRO	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the eactor unit) for DL 3.11.1.2 as for	ater intake l e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter,	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for	ater intake l e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op iditions would have doses (from each r o ODCM CONTRO	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for	ater intake l e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter,	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for	ater intake l e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year
• • • • • • • •	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cont the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mre	of 600 applicable to osite bank from BV presents a conserva is located on the op iditions would have doses (from each r o ODCM CONTRO r quarter, em total body	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank an to exist for the eactor unit) for DL 3.11.1.2 as for	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cont the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mre	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter, em total body	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank an to exist for the eactor unit) for DL 3.11.1.2 as for	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
77	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calendat $D_{\tau} < 1.5$ mrem	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter, em total body	the Midland w -1 and BV-2 (i tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for the second second second second second the second	ater intake 1 e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
77	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cont the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mrem For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ	the Midland w -1 and BV-2 (i. tive fully mixed posite bank an to exist for the reactor unit) for DL 3.11.1.2 as for the sector s	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
- 73	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con- the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mrem For the calenda	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ	the Midland w -1 and BV-2 (i. tive fully mixed posite bank an to exist for the reactor unit) for DL 3.11.1.2 as for the sector s	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
77	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mrem For the calenda $D_{\tau} < 3$ mrem	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ r year, total body	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for the second	ater intake 1 e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cont the intake. The cumulative are compared to For the calendat $D_{\tau} < 1.5$ mrem For the calendat $D_{\tau} < 3$ mrem	of 600 applicable to osite bank from BV presents a conserva is located on the op iditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ r year, total body	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank and to exist for the eactor unit) for DL 3.11.1.2 as for the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen quarter	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed cont the intake. The cumulative are compared to For the calendat $D_{\tau} < 1.5$ mrem For the calendat $D_{\tau} < 3$ mrem	of 600 applicable to osite bank from BV presents a conserva is located on the op ditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ r year, total body	the Midland w -1 and BV-2 (i. tive fully mixed oposite bank and to exist for the eactor unit) for DL 3.11.1.2 as for the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen quarter	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4]
	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con- the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mrem For the calenda $D_{\tau} < 3$ mrem $D_{\tau} < 10$ mre	of 600 applicable to osite bank from BV presents a conserva is located on the op aditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ r year, total body m any organ	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for the second second second second second second second	ater intake 1 e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows:	ocated 0 ÷ 3). Frage co he wate effluen quarter	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4] [1.3-5] [1.3-6]
Take 1	The far field dil dilution factor of and on the opport factor of 600 re Midland intake fully mixed con- the intake. The cumulative are compared to For the calenda $D_{\tau} < 1.5$ mrem For the calenda $D_{\tau} < 5$ mrem For the calenda $D_{\tau} < 10$ mrem	of 600 applicable to osite bank from BV presents a conserva is located on the op iditions would have doses (from each r o ODCM CONTRO r quarter, em total body any organ r year, total body	the Midland w -1 and BV-2 (i. tive fully mixed posite bank and to exist for the reactor unit) for DL 3.11.1.2 as for the second second second and the second second second second second and the second sec	ater intake I e., 200 = 60 d annual ave d is below the radioactive a calendar o ollows: -6] are exce	ocated 0 ÷ 3). Frage con he wate effluen quarter a eded, a	1.3 miles downstread The total dilution ndition. Since the r surface, essentially t to be transported to and a calendar year [1.3-3] [1.3-4] [1.3-5] [1.3-6] Special Report

?

•

.....

:

÷.

: ; ;

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.01	
Title:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: LIQUID EFFLUENTS	Revision: 2	Page Number: 22 of 38

8.3.2 Projection Of Doses (ODCM_CONTROL 3.11.1.3)

Doses due to liquid releases shall be projected at least once per 31 days in accordance with ODCM CONTROL 3.11.1.3 and this section. The Liquid Radwaste Treatment System shall be used to reduce the radioactive materials in each liquid waste batch prior to its discharge, when the projected doses due to liquid effluent releases from each reactor unit, when averaged over 31 days would exceed 0.06 mrem to the total body or 0.2 mrem to any organ. Doses used in the projection are obtained according to equation [1.3-1]. The 31-day dose projection shall be performed according to the following equations:

[13-7]

[1.3-8]

When including pre-release data,

$$D_{31} = \left[\frac{A+B}{T}\right] \quad 31+C$$

When not including pre-release data,

$$D_{31} = \left[\frac{A}{T}\right] \quad 31 + C$$

where:

 D_{31} = Projected 31 day dose (mrem).

A = Cumulative dose for quarter (mrem).

B = Projected dose from this release (mrem).

T = Current days into quarter.

C = Value which may be used to anticipate plant trends (mrem).

8.4 Liquid Radwasté System

The liquid radwaste system has the capability to control, collect, process, store, recycle, and dispose of liquid radioactive waste generated as a result of plant operations, including anticipated operational occurrences. This system also uses some of the components of the steam generator _ blowdown system for processing.

Simplified flow diagrams of the liquid radwaste systems for BV-1 and BV-2 are provided as ATTACHMENT D Figures 1.4-1 and 1.4-2 respectively. A diagram showing the liquid effluent release points is provided as ATTACHMENT D Figure 1.4-3. A diagram of the site boundary for liquid effluents is provided as ATTACHMENT E Figure 5-1.

Since the concept of a shared liquid radwaste system is used, then any liquid waste generated can be stored, processed and discharged from either BV-1 or BV-2.

Beaver Valley Power Station		Procedure Number: 1/2-ODC-2.01		
Title:	îtke:		Level Of Use:	
	EEEI LIENTS	Revision:	General Skill Reference Page Number:	
DDCM: LIQUID EFFLUENTS		2	23 of 38	
8.4.1 <u>BV-</u>	1 Liquid Radwaste System Components	•		
8.4.1.1	1LW-TK-2A/2B: High Level Waste Drain Tanks			
	There are two of these tanks, each tank has a capa located on the northwest wall of the Auxiliary Bu receive liquid wastes from the vent and drain syst	ilding (elevat	- ,	
8.4.1.2	1LW-TK-3A/3B: Low Level Waste Drain Tanks	•		
	There are two of these tanks, each tank has a capa located in the northwest corner of the Auxiliary B receive liquid wastes from the vent and drain syst	uilding (elev		
8.4.1.3	1LW-I-2: Liquid Waste Pre-Conditioning Filter	& Deminerali	zer	
	The main purpose of the pre-conditioning filter & waste water of particulate and dissolved radioacti 1LW-TK-2A/2B and 1LW-TK-3A/3B. There are conditioning filter associated with this system. T customized with varying grades of activated chara radionuclides in a colloidal state. Each of the der with different resins for effective removal of cher radioactive contaminants. Generally, beds 1 and and 4 contain a Mixed Bed Resin. This system is Building (elevation 735').	ve contamina four resin be he pre-condit coal intended nineralizer be nical contam 2 contain a C	ants that is stored in eds and a pre- ioning filter can be for removal of eds can be customized inants along with cation Resin and beds	
8.4.1.3	An evaporator (6 gpm) was originally used However, this evaporator was retired prior because of concerns for creating a mixed-w	to initial issu		
8.4.1.4	1LW-TK-7A/7B: Steam Generator Drain Tanks	•	· · · · · · · · · · · · · · · · · · ·	
	There are two of these tanks, each tank has a capa located in the Fuel Pool Leakage Monitoring Roc receive liquid waste that has been processed throw These tanks can also receive liquid waste from U operation, the tank is placed on recirculation thro radioactivity concentration is acceptable for disch volumes must be recirculated prior to sampling for	om (elevation ugh the liquid nit 2. Upon ugh the demi urge. A min	735). They normally I waste demineralizer completion of filling ineralizer until the imum of two tank	
8.4.1.5	RM-1LW-104: Liquid Waste Discharge Radiation	on Monitor	· .	
	This off-line gamma scintillator radiation monito as it is being discharged. The upper activity alar setpoint that would indicate we are approaching	m on this rad	iation monitor has a	

•. ;

do3

٦ ١

Be	eaver Valley Power Station	Procedure N	· •
		Unit:	1/2-ODC-2.01 Level Of Use:
·	, (,	1/2	General Skill Reference
DDCM: LIOI	D EFFLUENTS	Revision:	Page Number:
		2	24 of 38
	leaving the site. If an upper activity alarm on th automatically terminates the discharge by closin		
8.4.2 <u>BV</u>	-1 Laundry and Contaminated Shower Drain S	ystem Compo	<u>nents</u>
8.4.2.1	1LW-TK-6A/6B: Laundry and Contaminated S	shower Drain T	anks
	There are two of these tanks, each has a capacity in the northwest corner of the Auxiliary Buildin laundry and contaminated shower drains waste tanks can also receive mop water waste from Un sent to the liquid waste demineralizer for clean organic compounds that will deplete a resin bed operation, the tank must be recirculated a minin sampling for discharge permit preparation.	g (elevation 72 from the Servic nit 2. The wast 1p because this I. Upon comple	2). They receive the Building. These the in these tanks is not waste may contain the filling
8.4.2.2	RM-1LW-116: Laundry and Contaminated Sho Radiation Monitor	ower Drains Ta	nk Discharge
• •	This off-line gamma scintillator radiation monit contaminated shower drains waste as it is being on this radiation monitor has a setpoint that wo limits for radioactive water leaving the site. If a radiation monitor is received, it automatically to discharge line isolation valve.	discharged. T uld indicate we an upper activit	he upper activity alarm are approaching OEC y alarm on this
8.4.3 <u>BV</u>	-2 Liquid Radwaste System Components		
8.4.3.1	2LWS-TK21A/21B: Waste Drain Tanks		
- Mar	There are two of these tanks, each tank has a callocated in the northeast corner of the Auxiliary receive liquid wastes from the vent and drain sy liquid wastes from Unit 1. IF further processin placed on recirculation. A minimum of two tar to sampling for discharge permit preparation.	Building (eleva ystem. These ta g is not necessa	ation 710'). They anks can also receive ary, <u>THEN</u> it may be
8.4.3.2	2SGC-IOE21A/21B: Steam Generator Blowdo	own Cleanup Io	n Exchangers
	The main purpose of the ion exchangers is to cl and dissolved radioactive contaminants through resin bed, outlets strainer, and cleanup filter ass exchangers. They are located in the Waste Har	h an ion exchan sociated with ea	ge process. There is a ach of these ion
8.4.3.	2.1 Two evaporators (20 gpm each) were ori at Unit 2. However, this evaporator was ODCM, because of concerns for creating	retired prior to	initial issue of the

	eaver Valley Pov	wer Statio	n	Procedure Nu	1/2-0DC-2.01	
litle:		i	<u> </u>	Uait:	Level Of Use:	
				<u>1/2</u> Revision:	General Skill Page Number:	Reference
ODCM: LIQUII	DEFFLUENTS			2	25 of	38
			Diami			č.
8.4.3.3	2SGC-TK23A/23B:	Steam Generat	or blowdown	Test Tanks		: K
	There are two of these	e tanks, each ha	as a capacity of	f 18,000 gall	ons. They are	located
	in the Auxiliary Build			-	•	
	processed through the	cleanup ion e	xchangers. Up	on completion	on of filling op	eration,
	the tank is placed on i		-			
	concentration is accept		•			nust be
	recirculated prior to s	ampling for dis	scharge permit	preparation.		1
8.4.3.4	2SGC-TK21A/21B:	Steam Generat	or Blowdown	Hold Tanks		
P.C.F.0	2500-1K21M21D.					•
	There are two of these	e tanks, each h	as a capacity of	f 50,000 gall	ons. They are	located
ž.,•	in the Waste Handlin			-	-	
	waste when the radio					
	is not acceptable for c	•			-	
· . :	Unit 1. The contents					
· ·	Unit 2 Liquid Radwa					
· · · · · ·	acceptable for dischar	-			ist be recircula	ted
•	prior to sampling for	discharge perm	nit preparation.			
						· · ·
8.4.3.5	2SGC-RO100: Liqui	d Waste Efflue	ent Monitor			
8.4.3.5	2SGC-RQ100: Liqui			•		
8.4.3.5	This off-line gamma	scintillator radi	iation monitor	-		
8.4.3.5	This off-line gamma as it is being discharg	scintillator radi ed. The upper	iation monitor activity alarm	on this radia	ation monitor h	nas a
8.4.3.5	This off-line gamma as it is being discharg setpoint that would ir	scintillator radi ed. The upper idicate we are a	iation monitor activity alarm approaching O	on this radia EC limits for	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would ir	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5 *-	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater
8.4.3.5	This off-line gamma as it is being discharg setpoint that would in leaving the site. If an	scintillator radi ed. The upper idicate we are a upper activity	iation monitor activity alarm approaching O alarm is receiv ine isolation va	on this radia EC limits for ved, it autom	ation monitor h r radioactive w	nas a . vater

:

ر ک

÷

ł

.

	Beaver Va	1 12	Procedure Number: 1/2-ODC-2.01		
		•	Unit:	1/2-ODC-2.01 Level Of Use:	
Title:	· · · ·			1/2	General Skill Re
		•		Revision:	Page Number:
ODCM: L	IQUID EFFLUEN	412		2	26 of 38
		ATTACHME	NT A		
		Page 1 of	4		
		LIQUID SOURCE			
TABLE 1.	1-12				
	UID SOURCE TEN	RM			
		.* ·*		i.	(4)
		. Q			Ei
		A	(3)		DETECTION
		ANNUALRELEASE	OEC		EFFICIENCY
	NUCLIDE	ß	<u>(uCi/ml)</u>		(cpm/uCl/ml)
	Cr-51	13E-3	SE-3		1.18E+7
	Mn-54	3.1E4	3E-4		8.59E+7
	Fe-55	1.6E-3	1E-3		(5)
	Fe-59	83E4	1E4		9.17E+7 1.16E+8
	Co-58	1.4E-2	2E4		1.73E+8
	Co-60 Zn-65 ^(3.1.3.13)	20E-3 269E-2	3E-5 5E-5		4.67E+7
	Np-239	14E4	2E4		849E+7
	Br-83	25E-5	9E-3		1.36E+6
	Br-84	25E-5	4E-3		9.75E+7
	Br-85	2766	(5)		6.19E+6
	Rb-86	7.5E-5	7E-5		(5)
•	Sr-89	2.9E4	8E-5		(5)
	Sr-90	1.1E-5	5E-6		(5)
	Y-90	9.4E-6	7E-5		(5)
	Y-91m	8.7E-6	2E-2		8.98E+7
	Y-91	5.7E-5	8E-5		2.60E+5
	Y-93	7.4E-7	2E-4		(5)
	• Zr-95	5.1E-5	2E-4		8.60E+7
	Nb-95	5.2E-5	3E-4 2E-4		8.64E+7 6.97E+7
	Sr-91	1.3E-5	2E-4 2E-4		2.84E+7
	Mo-99 Tc-99m	1.1E-2 1.1E-2	· 1E-2		2.04E+7 8.96E+7
	Ru-103	3.4E-5	3E-4		9.5E+7
1	Ru-105 Ru-106	1.0E-5	3E-5		(5)
: +=	Rh-103m	3.4E-5	6E-2		(5)
1	[°] Rh-106	1.0E-5	(5)		(5)
	Te-125m	2.5E-5	2E-4		1.83E+5
[Te-127m	2.6E-4	9E-5		4.09E+4
Į	Te-127	2.7E-4	1E-3		1.38E+6
	Te-129m	1.1E-3	7E-5		4.02E+6
	Te-129	6.7E-4	4E-3		1.12E+7
	I-130	1.2E-4	2E-4		3.08E+8
ł	Te-131m	1.6E-4	8E-5		1.82E+8
1	Te-131	3E-5	8E-4		1.20E+8
ł	I-131	1.6E-1	1E-5		1.11E+8
	Te-132	4.3E-3	9E-5		- 1.17E+8 2.66E+8
1	I-132	4.9E-3	1E-3 7E-5	•	9.90E+7
1	I-133	4.0E-2	/E-J	•	J.JULT/

L

.

.

Beaver V	Procedure Nu	mber: [/2-ODC-2.01		
	Unit:	Level Of Use:		
			1/2	General Skill Reference
DDCM: LIQUID EFFLU	FNTS		Revision:	Page Number:
		<u> </u>	2	<u>27 of 38</u>
	ATT	ACHMENT A		:
	· • • •	Page 2 of 4		•
	LIQUID	SOURCE TERMS		
	-			
I-134	8.0E-5	4E-3		2.70E+8
Cs-134	4.6E-2	9E-6	• • •	1.99E+8
I-135	4.3E-3	3E-4		1.19E+8
Cs-136 Cs-137	8.9E-3 3.3E-2	6E-5 1E-5		2.80E+8 8.01E+7
Ba-137m	3.1E-2	1E-5		8.01E+7
Ba-13/11 Ba-140	1.1E-4	8E-5		4.37E+7
La-140	1.1E-4	9E-5		2.00E+8
Ce-141	5.1E-5	3E-4		5.07E+7
Ce-141	2.8E-6	2E-4		7.27E+7
Ce-144	3.2E-5	3E-5		1.06E+7
Pr-143	2.7E-5	2E-4	:	1.04E+0
Pr-144	3.2E-5	6E-3		2.25E+6
H-3	5.50E+2	1E-2		(5)
TOTAL ⁽¹⁾	4.05E-1		••	•
•	4.0JE-1			1 <u>.</u>
 (2) Source Term for (RM-1L) (3) ODCM Effluent Concent (4) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	5) from Stone and Webster e EC values of 10 CFR 20 LW-116) from Calculation	(3.1.1.3)	•
 (2) Source Term for (RM-1L (3) ODCM Effluent Concent (4) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (2) Source Term for (RM-1L (3) ODCM Effluent Concent (4) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (2) Source Term for (RM-1L) (3) ODCM Effluent Concent (4) Detection Efficiency for (1) 	W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (2) Source Term for (RM-1L) (3) ODCM Effluent Concent (4) Detection Efficiency for (1) 	W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (2) Source Term for (RM-1L (3) ODCM Effluent Concent (4) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (a) Source Term for (RM-1L) (b) ODCM Effluent Concent (c) Detection Efficiency for (W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•
 (2) Source Term for (RM-1L) (3) ODCM Effluent Concent (4) Detection Efficiency for (1) 	W-104 and RM-1LW-116 ration Limit = 10 times the	e EC values of 10 CFR 20	(3.1.1.3)	•

Beaver Valle	Procedure Number: 1/2-ODC-2.01				
			Unit:	Level Of Use:	—
			1/2	General Skill Reference	ce
DCM: LIQUID EFFLUENTS			Revision:	Page Number:	
DEMI. EIQUE EITEDENIS			2	28.of 38	_
	ATTACHM				
•	Page 3 of				
	LIQUID SOURC	E TERMS			
TABLE 1.1-1b					
BV-2 LIQUID SOURCE TERI	M ·			<i>(</i> 1)	
-	(2)			(4)	
	Ai	(3)		DETECTION	
	ANNUALRELEASE	· OECi		EFFICIENCY	
NUCLIDE	<u>(C)</u>	<u>(uCi/ml)</u>		(cpm/uCi/ml)	
Cr-51	1.00E-4	5E-3		2.01E+7	
Mn-54	2.50E-5	3E-4		1.27E+8	
Fe-55	1.30E-4	1E-3		(5)	
Fe-59	650E-5	1E-4		1.26E+8	
Co-58	1.10E-3	2E-4		1.82E+8	
Co-60	1.60E-4	3E-5		2.38E+8	
Zn-65 ^(3.1.3.13)	5.10E-2	5E-5		6.50E+7	
Np-239	3.20E-5	2 E -4		1.65E+8	
Br-83	2.90E-5	9E-3		2.42E+6	
Br-84	5.90E-9	4E-3		1.38E+8	
Rb-86	3.70E-5	7E-5		1.04E+7	
Sr-89	2.20E-5	8E-5		1.83E+4	
Sr-90	8.50E-7	5E-6		(5)	
· Sr-91	5.30E-6	2E-4		1.04E+8	
Mo-99	2.30E-3	2E-4		4.47E+7	
Tc-99m	2.10E-3	1E-2		1.40E+8	
Te-125m	1.90E-6	2E-4		3.94E+5	
Te-127m	2.10E-5	9E-5		1.26E+5	
Te-127	2.50E-5	1E-3		2.43E+6	
Te-129m	8.20E-5	7E-5		6.53E+6	
Te-129	5.30E-5	4E-3		1.96E+7	
I-130	230E-4	2E-4		5.18E+8	
Te-131m	5.20E-5	· 8E-5		2.85E+8	
Te-131	9.40E-6	8E-4		1.88E+8	
I-131	1.00E-1	1E-5		1.96E+8	
Te-132	7.80E-4	9E-5		1.76E+8	
I-132	2.30E-3	1E-3		4.22E+8	
I-132	6.50E-2	7E-5		1.73E+8	
I-135	4.60E-6	4E-3		4.06E+8	
Cs-134	3.00E-2	9E-6		3.25E+8	
F135	9.20E-3	3E-4		1.71E+8	
Cs-136	3.90E-3	6E-5		4.28E+8	
	220E-2	1E-5		1.28E+8	
Cs-137 Do 127m	2.10E-2	1E-5		1.33E+8	
Ba-137m		8E-5		7.50E+7	
Ba-140	9.30E-6	9E-5		- 3.08E+8	
La-140	8.40E-6	JL-J		2001210	

-

Beaver Valley]	Power Station		Procedure Num	
Title:			Unit:	/2-ODC-2.01 Level Of Use:
4	•		1/2	General Skill Reference
ODCM: LIQUID EFFLUENTS		,	Revision:	Page Number:
1	ATTACHMENT		12	29 of 38
		A		,
	Page 4 of 4 LIQUID SOURCE TI	ERMS		,
TABLE 1.1-1b (continued)	·			·
BV-2 LIQUID SOURCE TERM				
	(2)		6	4) · · · · · · · · · · · · · · · · · · ·
	A			
	Ai ANNUAL	(3)		Ei CTION
	RELEASE	OEC _i	EFFIC	
NUCLIDE	(Ci)	<u>(uCi/ml)</u>		ıCi/ml)
Y-90	6.00E-7	7E-5	<u>(cpii)</u>	
Y-91m	3.60E-6	2E-2	1.50)E+8
Y-91	4.40E-6	8E-5		5E+5
Y-93	3.00E-7	2E-4		BE+7
Zr-95	4.00E-6	2E-4		5E+8
Nb-95	4.00E-6	3E-4		SE+8
Ru-103	2.70E-6	3E-4		E+8
Ru-106	8.20E-7	3E-5		5)
Rh-103m	2.70E-6	6E-2		5)
Rh-106	8.20E-7	-	5.65	5E+7
Ce-141	4.00E-6	3E-4	7.75	5E+7
Ce-143	8.60E-7	2E-4	1.20)E+8
Ce-144	2.60E-6	3E-5		7E+7
Pr-143	2.30E-6	2E-4		3E+0
Pr-144	2.60E-6	6E-3)E+6
$\frac{H-3}{H}$	<u>5.50E+2</u>	1E-2	. с. с. (5)
TOTAL ⁽¹⁾	2.40E-1		. 4.	• • • •
	La Maria Maria Pr	. '		, 1
	e en parte de la parte		•	3• 4.3

Excluding Tritium and Entrained Noble Gases
 Source Term for (2SGC-RQ100) from Computer Code LIQ1BB ^(3.1.2.3)
 ODCM Effluent Concentration Limit = 10 times the EC values of 10 CFR 20 ^(3.1.2.1)
 Detection Efficiency for (2SGC-RQ100) from Calculation Package ERS-SFL-86-026 ^(3.1.2.2)

Section and the

÷.

⁽⁵⁾ Insignificant

	Beaver Valley	Power Statio	n	Procedure Nu	I/2-ODC-2.01
Title:				Unit:	Level Of Use:
•				1/2	General Skill Reference
OD	CM: LIQUID EFFLUENTS			Revision:	Page Number:
				2	<u>30 of 38</u>
		ATTACHM			
	·	Page 1 o			
		RECIRCULATI	ON TIMES		
					· .
	BLE 1.2-1a				. ,
B	-1 RECIRCULATION TIMES RE	QUIRED BEFORE :	SAMPLING OF	LIQUID DIS	CHARGETANKS
				-	
		r	· ·		·
			APPROXIMA		CULATION TIME ⁽¹⁾
	TANK DESCRIPTION	ASSET NO.		TE RECIRC	·
:	TANK DESCRIPTION	ASSET NO.		TE RECIRC	CULATION TIME ⁽¹⁾
:			(Based on I	TE RECIRO	CULATION TIME ⁽¹⁾ ecirculation Rates)
	Laundry And Contaminated	ASSET NO. 1LW-TK-6A/6B		TE RECIRO	CULATION TIME ⁽¹⁾ ecirculation Rates)
			(Based on I	TE RECIRO	CULATION TIME ⁽¹⁾ ecirculation Rates)
	Laundry And Contaminated		(Based on I	TE RECIRO Historical Re gal) (2) / (1	CULATION TIME ⁽¹⁾ ecirculation Rates) .6 gpm)
	Laundry And Contaminated Shower Dain Tanks Low Level Waste Drain Tanks	1LW-TK-6A/6B 1LW-TK-3A/3B	(Based on 1 2.5 hrs - (1200 1.5 hrs = (200	TE RECIRO Tistorical Re gal) (2) / (1 0 gal) (2) / (4	CULATION TIME ⁽¹⁾ ecirculation Rates) 6 gpm) 45 gpm)
	Laundry And Contaminated Shower Dain Tanks	1LW-TK-6A/6B	(Based on 1 2.5 hrs - (1200	TE RECIRO Tistorical Re gal) (2) / (1 0 gal) (2) / (4	CULATION TIME ⁽¹⁾ ecirculation Rates) 6 gpm) 45 gpm)
	Laundry And Contaminated Shower Dain Tanks Low Level Waste Drain Tanks	1LW-TK-6A/6B 1LW-TK-3A/3B	(Based on 1 2.5 hrs - (1200 1.5 hrs = (200	TE RECIRO Historical Re gal) (2) / (1 0 gal) (2) / (2 0 gal) (2) / (2	CULATION TIME ⁽¹⁾ ecirculation Rates) 6 gpm) 45 gpm) 50 gpm)

(1) The times listed are those approximated for two recirculations of a <u>full</u> tank with <u>one</u> recirculation pump in operation (using <u>historical</u> recirculation rates). Recirculation times for a partially full tank are directly proportional to the fraction of the tank capacity occupied by the entrained liquid waste (after isolation). Actual recirculation times are determined prior to sampling using actual tank volumes and actual recirculation rates available in the BV-1 Control Room.

1BR-TK-2A/2B

9.7 hrs =(13,000 gal) (2)/(45 gpm)

Boron Recovery Test Tanks

	Beaver Valley	Procedure Number: 1/2-ODC-2.01			
Title:	5 H - K			Unit: 1/2	Level Of Use: General Skill Reference
OD	CM: LIQUID EFFLUENTS			Revision: 2	Page Number: 31 of 38
		ATTACHME Page 2 of 2 RECIRCULATIO	2		
TA	BLE 1.2-1b				5. •
B	7-2 RECIRCULATION TIMES	REQUIRED BEFORE	;		
ł	TANK DESCRIPTION	ASSET NO.			CULATION TIME ⁽¹⁾ reulation Rates)
ì					
	Liquid Waste Tanks	2LWS-TK21A/21B	11.5 hrs = (10)),000 gal) (2)/(29 gpm)
- · ·	Steam Generator Blowdown Hold Tanks	2SGC-TK21A/21B	25.8 hrs = (5	1,000 gal) (2)/(66 gpm)
 	Steam Generator Blowdown Test Tanks	2SGC-TK23A/23B	9.1 hrs = (18	,000 gal) (2)/(66 gpm)

(1) The times listed are those approximated for two recirculations of a full tank with one recirculation pump in operation (using historical recirculation rates). Recirculation times for a partially full tank are directly proportional to the fraction of the tank capacity occupied by the entrained liquid waste (after isolation). Actual recirculation times are determined prior to sampling using actual tank volumes and actual recirculation rates available in the BV-2 Control Room.

> · i și și Stati

. . . .

...}

.

•

į

. . .

1

_}

	B	eaver V	alley Po	wer Stat	ion	Proce	dure Number:	
Title: ODCN		D EFFLUE				Revis	/2 Lev ion: Page	DDC-2.01 el Of Use: eneral Skill Referen e Number:
			INGESTION	ATTACH Page I DOSE CON		A .	2l 5	<u>32 of 38</u>
A _{it} V	LE 1.3-1 ALUES F m/hr per u		DULT FOR	THE BEAV	ER VALLEY	SITE	·	
	NUCLIDE	BONE	LIVER	T-BODY	THYROID	<u>KIDNEY</u>	LUNG	GHII
C	1-3	0.00E01	270E-01	2.70E-01	2.70E-01	2.70E-01	2.70E-01	2.70E-01
	1-4	3.13E04	626E03	6.26E03	6.26E 03	6.26E 03	6.26E03	6.26E 03
	1a-24	4.08E02	408E02	4.08E02	4.08E 02	4.08E 02	4.08E02	4.08E 02
C	-32	4.62E07	2.87E06	1.79E06	0.00E-01	0.00E01	0.00E-01	5.19E06
	2-51	0.00E-01	0.00E01	1.27E00	7.62E-01	281E01	1.69E00	321E02
	1/11-54	0.00E-01	4.38E03	835E02	0.00E-01	1.30E03	0.00E-01	134E04
F	/m-56	0.00E-01	1.10E02	1.95E01	0.00E-01	140E02	0.00E-01	3.52E03
	0-55	6.59E 02	4.56E02	1.06E02	0.00E-01	0.00E01	2.54E02	2.61E02
	0-59	1.04E 03	2.45E03	9.38E02	0.00E-01	0.00E01	6.83E02	8.15E03
	20-57	0.00E-01	2.10E01	3.50E01	0.00E-01	0.00E-01	0.00E-01	533E02
	20-58	0.00E-01	895E01	2.01E02	0.00E-01	0.00E-01	0.00E-01	1.81E03
	20-60	0.00E-01	2.57E02	5.67E02	0.00E-01	0.00E-01	0.00E-01	4.83E03
N	Ψ-63	3.12E04	2.16E03	1.05E03	0.00E-01	0.00E-01	0.00E-01	4.51E02
	Ψ-65	1.27E02	1.65E01	7.51E00	0.00E-01	0.00E-01	0.00E-01	4.17E02
	Δι-64	0.00E-01	1.00E01	4.70E00	0.00E-01	2.52E-01	0.00E-01	8.53E02
Z	n-65	2.32E04	737E04	333E04	0.00E-01	493E04	0.00E-01	4.64E04
	In-69	493E01	9.43E01	656E00	0.00E-01	6.13E01	0.00E-01	1.42E01
	Sr-83	0.00E01	0.00E01	404E01	0.00E-01	0.00E-01	0.00E-01	5.82E01
E	3r-84	0.00E-01	0.00E-01	524E01	0.00E-01	0.00E-01	0.00E-01	4.11E-04
	3r-85	0.00E-01	0.00E-01	2.15E00	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	3b-86	0.00E-01	1.01E-05	4.71E04	0.00E-01	0.00E-01	0.00E-01	1.99E-04
F	ው-88	0.00E-01	290E02	1.54E02	0.00E-01	0.00E-01	0.00E-01	4.00E-09
	ሁ-89	0.00E-01	1.92E02	1.35E02	0.00E-01	0.00E-01	0.00E-01	1.12E-11
	ኡ-89	2.22E.04	0.00E01	6.39E02	0.00E-01	0.00E-01	0.00E-01	3.57E-03
	75 37-90 37-91 37-92	5.48E05 4.10E02 1.55E02	0.00E-01 0.00E-01 0.00E-01	1.34E05 1.65E01 6.72E00	0.00E-01 0.00E-01 0.00E-01	0.00E-01 0.00E-01 0.00E-01	0.00E-01 0.00E-01 0.00E-01	1.58E04 1.95E03 3.08E03
	7-90	5.80E-01	0.00E-01	1.55E-02	0.00E-01	0.00E-01	0.00E-01	6.15E03
	7-91m	5.48E-03	0.00E-01	2.12E-04	0.00E-01	0.00E-01	0.00E-01	1.61E02
	7-91	8.50E 00	0.00E-01	2.27E-01	0.00E-01	0.00E-01	0.00E-01	4.68E03
	7-92	5.09E-02	0.00E-01	1.49E-03	0.00E-01	0.00E-01	0.00E-01	892E02
	7-93	1.62E-01	0.00E-01	4.46E-03	0.00E-01	0.00E-01	0.00E-01	5.12E03
	7-95	2.53E-01	8.11E-02	5.49E-02	0.00E-01	1.27E-01	0.00E-01	2.57E02
l I	2r-97 Nb-95 Nb-97	1.40E-02 4.47E 00 3.75E 02	2.82E-03 2.49E00 9.49E-03	1.29E-03 1.34E00 3.46E-03	0.00E-01 0.00E-01 0.00E-01	4.26E-03 2.46E00 1.11E-02	0.00E-01 0.00E-01 0.00E-01	1.51E04

۰.

L

•

·B	eaver V	alley Po	wer Stat	ion	Proced	lure Number: 1/2-OI	DC-2.01
tle:	- <u></u>		<u> </u>		- Unit:	Level	Of Use:
					 Revisi		eral Skill Referen
DCM: LIQUI	D EFFLUE	NTS	·· · · · · · · · ·		Revisi		Number: 33 of 38
······			ATTACH	MENT C		«	0
		•	^r Page 2	2 of 3			
	·]	NGESTION		MITMENT	FACTORS		
TABLE 1.3-1	•						
A _{it} VALUES F	FOR THE A	DULT FOR	THE BEAV	ER VALLEY	SITE		
(mrem/hr per u	ıCi/ml)	· •		T. 19 - 19		· ` .	·. ·. ·
NUCLIDE	BONE	LIVER	T-BODY	THYROID	KIDNEY	LUNG	<u>GI-LLI</u>
: Mo-99	0.00E-01	1.05E02	200E01	0.00E-01	238E02	: 0.00E-01 ;	243E02
Tc-99m	897E-03	254E-02	323E-01	0.00E-01	3.85E-01	124E-02	1.50E01
Tc-101	923E-03	1.33E-02	130E-01	0.00E-01	2.39E-01	6.79E-03	4.00E-14
Ru-103	4.51E00	0.00E-01	194E00	0.00E-01	1.72E01	0.00E-01	526E02
Ru-105	3.75E-01	0.00E-01	1.48E-01	0.00E-01	4.85E00	0.00E-01	229E02
Ru-106	670E01	0.00E-01	848E00	0.00E-01	1.29E02	0.00E-01	434E03
Ag-110m	9.48E-01	8.77E-01	521E01	0.00E-01	1.72E00	0.00E-01	3.58E02
Sb-124	7.87E00	1.49E-01	3.12E00	191E-02	0.00E-01	6.13E00	223E02
Sb-125	5.03E00	5.62E-02	120E00	5.11E-03	0.00E-01	3.88E00	5.54E01
Te-125m	2.57E03	9.30E02	3.44E02	7.72E02	1.04E04	0.00E-01	1.03E04
Te-127m	6.49E03	2.32E03	790E02	1.66E03	2.63E04	0.00E-01	2.17E04
Te-127	1.05E02	3.78E01	2.28E01	7.81E01	4.29E02	0.00E-01	8.32E03
Te-129m	1.10E04	4.11E03	1.74E03	3.78E03	4.60E04	0.00E-01	5.55E04
· Te-129	3.01E01	1.13E01	7.33E00	231E01	1.26E02	0.00E-01	2.27E01
Te-131m	1.66E03	8.10E02	6.75E02	1.28E03	821E03	0.00E-01	8.05E04
Te-131	1.89E01	7.88E00	5.96E00	1.55E01	827E01	0.00E-01	2.67E00
Te-132	241E03	1.50E03	1.47E03	1.72E03	1.50E04	0.00E-01	7.39E04
Te-134	3.10E01	203E01	125E01	271E01	1.96E02	0.00E-01	3.44E-02
I-129	1.19E02 ·	1.02E02	3.35E02	2.63E05	2.19E02	0.00E-01	1.61E01
I-130	2.75E01	8.10E01	3.20E01	6.87E03	1.26E02	0.00E-01	697E01
I-131	1.51E02	2.16E02	1.24E02	7.08E04	3.71E02	0.00E-01	5.70E01
I-132	7.37E00	1.97E01	6.90E00	6.90E02	3.14E01	0.00E-01	3.71E00
I-133	5.16E01	8.97E01	2.74E01	1.32E04	1.57E02	0.00E-01	8.06E01
I-134	3.85E00	1.05E01	3.74E00	1.81E02	1.66E01	0.00E-01	9.12E-03
1-135	1.61E01	421E01	1.55E01	2.78E03	6.76E01	0.00E-01	4.76E01
Cs-134	298E05	7.09E05	5.79E05	0.00E-01	2.29E05	7.61E04	1.24E04
Cs-136	3.12E04	1.23E05	8.80E04	0.00E-01	6.85E04	9.39E03	1.40E04
Cs-137	3.82E05	5.22E05	3.42E05	0.00E-01	1.77E05	5.89E04	1.01E04
Cs-138	2.64E02	522E02	2.59E02	0.00E-01	3.84E02	3.79E01	223E-03
Ba-139	9.69E-01	690E-04	2.84E-02	0.00E-01	6.45E-04	3.92E-04	1.72E00
Ba-140	203E02	2.55E-01	1.33E01	0.00E-01	8.66E-02	1.46E-01	4.18E02
Ba-140 Ba-141	4.71E-01	255E01 356E04	1.59E-02	0.00E-01	3.31E-04	2.02E-04	2.22E-10
Ba-142	2.13E-01	2.19E-04	134E-02	0.00E-01	1.85E-04	124E-04	3.00E-19
 La-140	1.51E-01	7.59E-02	2.01E-02	0.00E-01	0.00E-01	0.00E-01	5.57E03
La-140 La-142	7.71E-03	7.59E-02 3.51E-03	201E-02 8.74E-04	0.00E-01	0.00E-01	0.00E-01	256E01
		1.78E-02	2.02E-03	0.00E-01	826E-03	0.00E-01	680E01

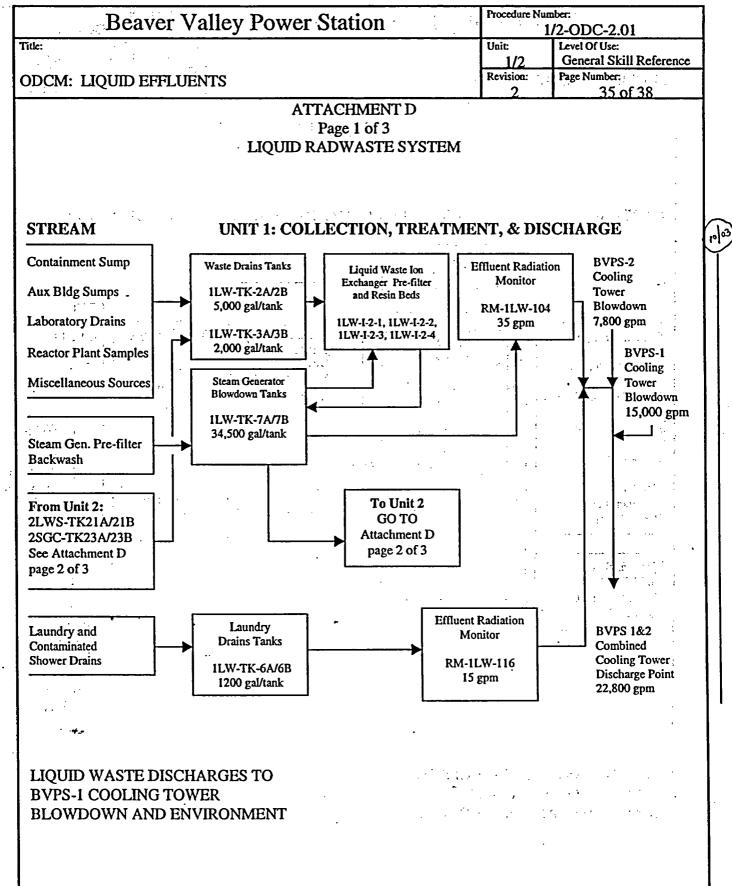
Be	eaver V	alley Po	wer Stat	ion	Proced	ure Numb 1/2	er. 2-0DC-2.01
Title: ODCM: LIQUI		NTC			Unit: 1/ Revisio	2	Level Of Use: General Skill Refere Page Number:
			<u> </u>		2	gen generale	_34 of 38
TABLE 1.3-1	1	NOESTION	I DOSE COL	MMITMENT	FACIURS		
A _{it} VALUES F (mrem/hr per u		DULT FOR	THE BEAV	ER VALLEY	SITE		•
NUCLIDE	BONE	LIVER	<u>T-BODY</u>	THYROID	KIDNEY		<u>GI-UI</u>
Ce-143 Ce-144	4.64E-03 1.37E00 5.54E-01	3.43E00 5.73E-01 2.22E-01	3.79E-04 7.36E-02 2.75E-02	0.00E-01 0.00E-01 0.00E-01	1.51E-03 3.40E-01 1.28E-01	0.00E 0.00E 0.00E	-01 4.64E02
Pr-143							
Pr-144	1.81E-03 3.79E-01 2.96E.02	7.53E-04 4.38E-01 2.47E 02	9.22E-05 2.62E-02 8.65E01	0.00E-01 0.00E-01 0.00E-01	4.25E-04 2.56E-01 0.00E-01	0.00E 0.00E 0.00E	61 2.10E03

•

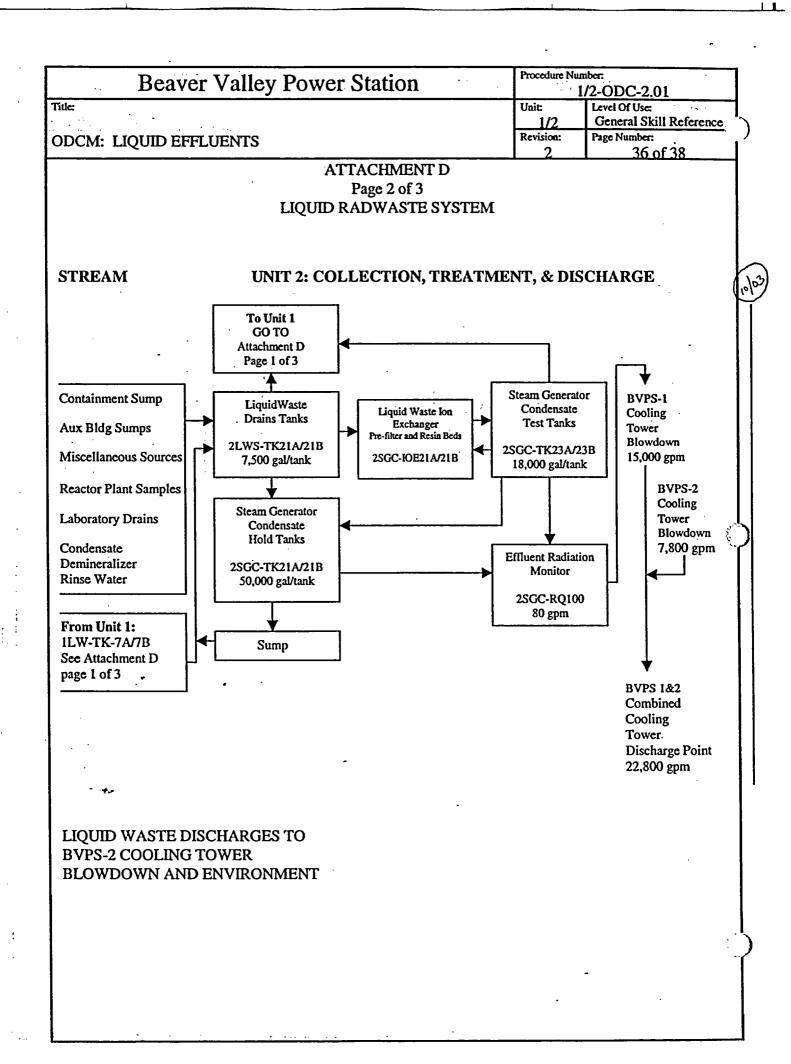
•

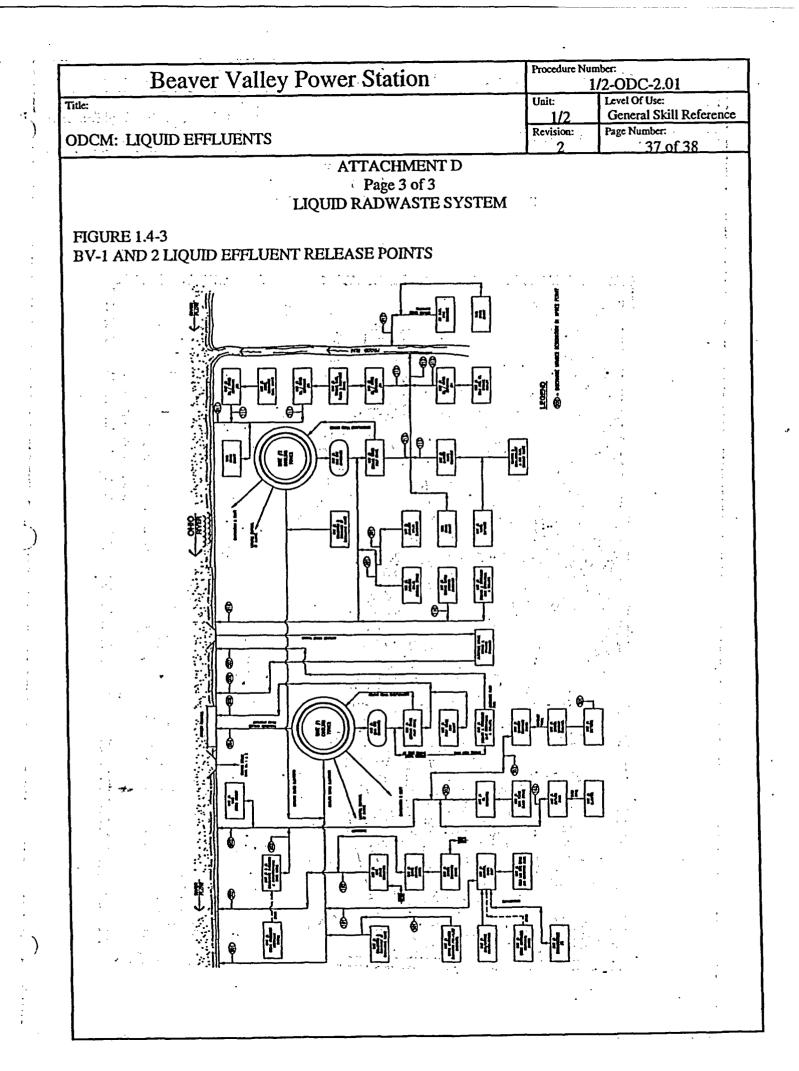
•

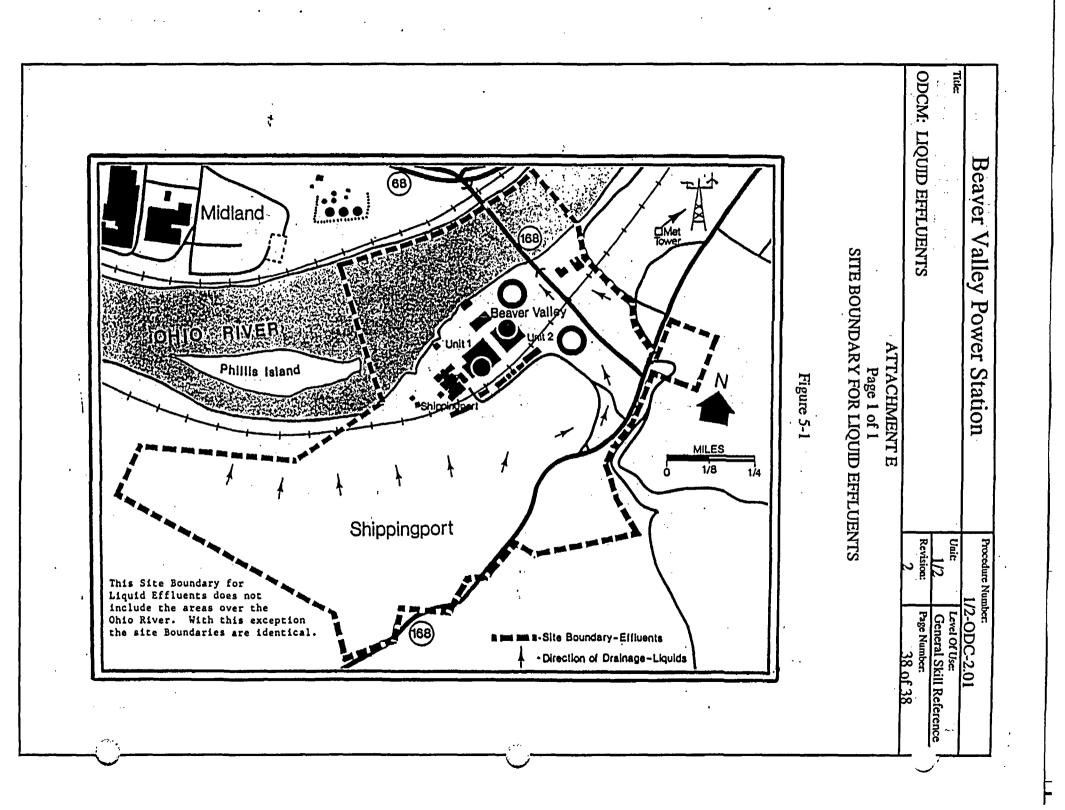
••;



:







· 104 - 11

RTL #A9.621B

۰;

· · ·

Beaver Valley Power Station

. . . 11

:

Unit 1/2

1/2-ODC-2.02

ODCM: GASEOUS EFFLUENTS

Document Owner Manager, Radiation Protection

. . . . and the second sec

e ste e statue de la seconda de la second	and the second	· · · ·
Revision Number	· · · · · · · · · · · · · · · · · · ·	1
Level Of Use	· · • · · ·	In-Field Reference
Safety Related Procedure	The state of the s	Yes

いのという日本語言語の筆 . 20 H 2 I ·1' 1.1

Le transfer

Bear	ver Valley Power Station	Procedure N	umber: 1/2-ODC-2.02
Title:		Unit:	1/2-0DC-2.02 Level Of Use:
		1/2	In-Field Reference
ODCM: GASEOU	S EFFLUENTS	Revision:	Page Number:
•		<u>I</u> I	2 of 128
	TABLE OF CONTENTS	1	
1.0 PURPOSE			4
	ES AND COMMITMENTS		
	nces		
	itments		
	AND FORMS		
	ONS AND LIMITATIONS		
	CE CRITERIA		
	SITES		
8.0 PROCEDUR	•		
	Setpoints		
8.1.1	BV-1 Monitor Alarm Setpoint Determina		
8.1.2	BV-2 Monitor Alarm Setpoint Determina		
8.1.3	BV-1/2 Monitor Alarm Setpoint Determi		
8.2 Compli	ance With 10 CFR 20 Dose Rate Limits (ODCM CON	JTROL 3.11.2.1)	
8.2.1	Dose Rate Due To Noble Gases	•••••	
· 8.2.2	Dose Rate Due To Radioiodines And Par	rticulates	41
· 8.3 Comp	liance With 10 CFR 50 Dose Limits (ODCM	CONTROLS 3.1	11.2.2 And 3.11.2.3)
•	ous)		
8.3.1	Dose Due To Noble Gases	•	
8.3.2	Dose Due To Radioiodines And Particula		
8.4 Gaseo	us Radwaste System BV-1 Gaseous Radwaste System Compo	•••••	
	BV-1 Gaseous Radwaste System Compo	nents	
8.4.2	BV-2 Gaseous Radwaste System Compo		
ATTACHMENT			
ATTACHMENT	· · · · · · · · · · · · · · · · · · ·		
ATTACHMENT			
ATTACHMENT.			
ATTACHMENT			
ATTACHMENT			•
DISTANCE	•		
DISTANCE ATTACHMENT	•		
ATTACHMENT			-
ALIACHMENT	U GASEOUS KAD WASTE STSTEMI		

٠

•

L_1._

Beaver Valley Power Station	Procedure N	1/2-ODC-2.02
Title: ODCM: GASEOUS EFFLUENTS	Unit: <u>1/2</u> Revision:	Level Of Use: In-Field Referent Page Number:
TABLE OF CONTENTS	I I	<u>1 3 of 128</u>
ATTACHMENT P BV-1 AND BV-2 GASEOUS EFFLUENT ATTACHMENT Q SITE BOUNDARY FOR GASEOUS EFFI		
		· · · · · · · · ·
	· · · ·	· · · · · · · · · · · · · · · · · · ·
		na sa tang
	12 · · ·	
	• • .	
n en	· . '	2
		•
an Anno a substant a su Anno a substant a substa	· · · · ·	
20.21 .		
	 (
 A strategie and the strategies and the str	• • • •	
an a		· 1.
	· · ·	
	. * •	
an a	• • • • •	
and Case Case Constant Branch Caller I with the ac-		

· · · · · ·

B		eaver Valley Power Station	Procedure N	1/2-ODC-2.02
Title:			Unit:	Level Of Use:
ODCA	ው በ	OUS EFFLUENTS	1/2 Revision:	In-Field Reference Page Number:
				4 of 128
1.0	<u>PURPO</u>	SE		
1.1		cedure provides the calculational methodology to b og release parameters.	e used for det	ermination of the
1.1	1.1 Gas	eous effluent monitor alarm setpoints		
1.1	1.2 Gas	eous effluent dose rate calculations		
1. :	1.3 Gas	cous effluent dose calculations		
1.2	This pro	- ocedure also provides information related to the follo	owing:	
1.2	2.1 Gas	seous Radwaste Treatment System.		
1.2	2.2 Site	Boundary used for gaseous effluents.		
1.3	Prior to old OD	issuance of this procedure, these items were located CM.	l in Section 2	and Section 5 of the
2.0	SCOPE			
2.1		ocedure is applicable to all station personnel (includ d to perform activities as described and referenced i		
3.0	REFER	RENCES AND COMMITMENTS		
3.1	Referer	nces		
3.	I.1 Řel	ferences for BV-1 Gaseous Effluent Monitor Setpoi	nts	
	3.1.1.1	Beaver Valley Power Station, Appendix I Analys 412; Table 2.1-3	sis - Docket N	o. 50-334 and 50-
	3.1.1.2	Beaver Valley Power Station, Unit 2 FSAR; Tab	le 11.3-1	
	3.1.1.3	BVPS Specification No. BVS 414, Table V Nuc Table 3, and Figure 2, May 30, 1974	lide Data,; Ta	ble 1 and Figure 1,
3.1.1.4		Calculation Package No. ERS-SFL-85-031, Unit Efficiency Data	1 Gaseous Eff	luent Monitor
	0115	Calculation Package No. ERS-HHM-87-014, Un	nit 1/Unit 2 Ol	DCM Gaseous
3.1.1.5		Alarm Setpoint Determinations	-	

1_1_

Γ	Be	aver Valley Power Station	Procedure N	umber: 1/2-ODC-2.02
τ	itle:	·	Unit:	Level Of Use:
			1/2	In-Field Reference
	DDCM: GASEO	US EFFLUENTS	Revision:	Page Number:
	3.1.1.7	Letter ND1SHP:776, dated February 12, 1988, BV Appendix B	TS-1 ODCN	_15 of 128 I Table 2.2-2,
	3.1.1.8	Stone and Webster Calculation No. UR(B)-262, G Containment Vacuum Pumps	aseous Relea	ases From
	3.1.2 Refe	erences for BV-2 Gaseous Effluent Monitor Setpoint	S	• • • • •
	3.1.2.1	Calculation Package No.ERS-SFL-86-026, Unit 2	DRMS Isoto	pic Efficiencies
	3.1.2.2	Calculation Package No. ERS-HHM-87-014, Unit Alarm Setpoint Determinations	1/Unit 2 OE	OCM Gaseous
l	3.1.2.3	Beaver Valley Power Station, Unit 2 FSAR; Table	11.3-2	
	3.1.2.4	Calculation Package No. ERS-ATL-87-026, BVPS Factor Justification	5-1 and BVP	S-2 ODCM T
	3.1.2.5	Stone and Webster Calculation No. UR(B)-262, G Containment Vacuum Pumps	aseous Relea	ases From
	3.1.3 Refe	erences Used for other portions of this procedure	•.• • •	
	3.1.3.1	NUREG-0133, Preparation of Radiological Efflue Nuclear Power Plants	nt Technical	Specifications for
	3.1.3.2	NUREG-1301, Offsite Dose Calculation Manual (Effluent Controls for Pressurized Water Reactors Supplement No. 1)	(Generic Let	
	3.1.3.3	NUREG-0324; XOQDOQ Program for the Meteo Releases at Nuclear Power Stations, September 19	rological Ev 977	aluation of Routine
	3.1.3.4 *-	NUREG-0017; Calculation of Releases of Radioa Liquid Effluents form PWR's Revision 0.		als in Gaseous and
-	3.1.3.5	Regulatory Guide 1.109, Calculation of Annual D Releases of Reactor Effluents for the Purpose of I 1977	mplementing	
	3.1.3.6	NUREG-0172, Age - Specific Radiation Dose Co Chronic Intake		actors for a one-year
	3.1.3.7	1/2-ADM-1640, Control of the Offsite Dose Calc		ual
	3.1.3.8	1/2-ADM-0100, Procedure Writers Guide	ь ^ї <u></u>	- 4 - 2 - 3
	3.1.3.9	NOP-SS-3001, Procedure Review and Approval		

de)

	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-2.02
Title:		Unit: 1/2	Level Of Use: In-Field Referen
ODCM: G	ASEOUS EFFLUENTS	Revision:	Page Number: 6 of 128
3.1.3	CR03-04830, Containment Vacuum Pump Re Term. CA-03; Revise Unit 1 Containment Va procedure 1/2-ODC-2.02, Attachment A, Tabl	cuum Pump Sou	
3.2 <u>Co</u>	mmitments		
3.2.1	None		
4.0 <u>RE</u>	CORDS AND FORMS		
4.1 <u>Re</u>	<u>cords</u>		
4.1.1	Any calculation supporting ODCM changes shall be retrievable document (e.g.; letter or calculation pack number.	•	
4.2 <u>Fo</u>	rms		
4.2.1	None	· .	
5.0 <u>PR</u>	ECAUTIONS AND LIMITATIONS		
	OCM CONTROLS applicable to dose rate apply to the nmation of releases from both units.	site. The site do	ose rate is due to th
5.2 OI	OCM CONTROLS applicable to accumulated dose applicable to accumulated dose applicable to accumulated dose applicable applicable to accumulated dose applicable applic	ply individually	to each unit.
5.3 Re	leases at the Beaver Valley site may be ground level o	or elevated in nat	ure.
5.3.1	All ground level releases are identified with a specif dose rate and dose attributed to that unit.	fic unit in the det	ermination of site
5.3.2	Elevated releases from both units are considered to system and are discharged from a common release p the BV-1 cooling tower.		
via Ot sp	BV-1 and BV-2, the dose from continuous and batch the shared radwaste system (Process Vent) are normative her continuous and batch releases via non-shared radw ecific unit. The only exception is a containment purge ributed to a specific unit.	ally apportioned waste systems sha	equally to the units all be attributed to
	ere is a difference in setpoint terminology presentatio stems of BV-1 and BV-2.	ns of the radiatic	on monitoring
5.5.1	Where HIGH and HIGH-HIGH terminology are use ALERT and HIGH terminology are used for the BV BV-2 monitors.		

.L.I.

	Beaver Valley Power Station	Procedure N	1/2-ODC-2.02
Title:		Unit: 1/2	Level Of Use: In-Field Reference
ODCM: C	ASEOUS EFFLUENTS	Revision:	Page Number:
		11	<u>7.of 128</u>
5.5.2	Also, BV-2 setpoints are presented in uCi/cc rather than difference is due to BV-2 software which applies a conve data (cpm). The user is cautioned that the uCi/cc present for the specific isotopic mix used in the determination of practice, setpoints determined for a calculated mix are co determined on analysis prior to release will be correct for but the indicated uCi/cc value may differ from the actual	ersion factor tation is tech the converse prrect for that r properly co	to the BV-2 raw inically correct only sion factor. In at mix. Setpoints
5.5.3	All BV-1 and BV-2 effluent monitors specified herein has established at 60 percent of the site limit, and Lower Ala percent of the site limit.	ave Upper A	-
. in	release may be batch or continuous in nature. Batch refers radionuclide concentrations or flow, such as releases from urges and ventings of systems or components with infrequen	gas storage	
5.6.1	Batch releases may be due to operational variations which greater than 50% of the releases normally considered as these sources during normal operation, including anticip defined as those which occur for a total of 500 hours or l more than 150 hours in any quarter.	continuous. ated operation	Batch releases from onal occurrences, are
5.6.2	The batch relative concentration value has been calculate guidelines provided in NUREG-0324 ^(3.1.3.3) for short-term		ance with the
5.6.3	IF simultaneous batch and continuous release out of one lowest setpoint obtained according to Sections 8.1.1.1 th	• •	
	his procedure also contains information that was previously evious BV-1 and BV-2 Offsite Dose Calculation Manual.	contained i	n Section 5 of the
5.7.1	In regards to this, the site boundary for gaseous effluents	s was includ	ed in this procedure.
5.7.2 *-	The Site Boundary for Gaseous Effluents is shown in A	ITACHME	NT P Figure 5-1.
6.0 <u>A</u>	CCEPTANCE CRITERIA		
m 1	Il changes to this procedure shall contain sufficient justific aintain the level of radioactive effluent control required by 90, 10 CFR 50.36a, and Appendix I to 10 CFR 50, and not ffluent dose or alarm setpoint calculation. ^(3.1.3.2)	10 CFR 20.	.1302, 40 CFR Part
6.1.1	All changes to this procedure shall be prepared in accordand 1/2-ADM-1640. ^(3.1.3.7)	dance with 1	/2-ADM-0100 ^(3.1.3.8)
6.1.2	All changes to this procedure shall be reviewed and app SS-3001 ^(3.1.3.9) and 1/2-ADM-1640. ^(3.1.3.7)	roved in acc	ordance with NOP-

1903

• •

. ...

• • •

· · ··

1

ł

.....

:

:

	Beaver Valley Power Station	Procedure N						
litic:		Unit:	1/2-ODC-2.02 Level Of Use:					
		1/2	In-Field Reference					
ODCM. C	JASEOUS EFFLUENTS	Revision:	Page Number:					
		1	<u>8 of 128</u>					
7.0 <u>Pl</u>	REREQUISITES							
7.1 TI	ne user of this procedure shall be familiar with ODCM s	tructure and co	ontent.					
8.0 <u>Pl</u>	ROCEDURE	OCEDURE						
8.1 <u>A</u>	larm Setpoints							
8.1.1	BV-1 Monitor Alarm Setpoint Determination		2					
	ODCM CONTROL 3.11.2.1 require that the dose rate radionuclides in the gaseous effluent released from the mrem/yr to the total body and to \leq 3000 mrem/yr to the	e site shall be						
· .	This section describes the methodology used to main radionuclides within ODCM CONTROL 3.11.2.1 for setpoints for BV-1.							
	The methodologies described in Section 8.1.1.2, 8.1.2		-					
	means of determining monitor alarm setpoints that m performed prior to release.	ay be used whe	en an analysis is					
• .		is shown in the stream monitor , and 5 are loca	following Table. Dos s, of which 3 are ited at BV-2. As					
•	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent located at BV-1 (alternates exists for these monitors)	is shown in the stream monitor , and 5 are loca	following Table. Dos s, of which 3 are ited at BV-2. As					
	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
•	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
• .	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
•	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
•	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
•	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
- 40	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
4.0	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
- 40	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
4.5	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
- 42	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
- 4.	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
- 40	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ited at BV-2. As 1/2 Process Vent.					
	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					
	performed prior to release. Control of the site dose rate limit due to noble gases rate control is exercised through a total of 8 effluent s located at BV-1 (alternates exists for these monitors) previously noted, BV-1 and BV-2 elevated releases a	is shown in the stream monitor , and 5 are loca re via the PV-1	following Table. Dos s, of which 3 are ated at BV-2. As 1/2 Process Vent.					

.

-- - - -

	Beaver Valley Power S	tation	Procedure Nur 1	/2-ODC-2.02
itle:			Unit:	Level Of Use:
DCN	I: GASEOUS EFFLUENTS	· .	<u>1/2</u> Revision: 1	In-Field Reference Page Number: 9 of 128
				· · · · · · · · · · · · · · · · · · ·
	Monitor Setpoint Specificatio	ns Based On Fraction C	Of Site Lim	<u>it</u>
	UNIT RELEASE POINT	FRACTION OF SITE	LIMITING	DOSE RATE
	MONITOR NO.	Upper Alarm	Lower A	larm
	(VV-1) Unit 1, Auxiliary Building Vent			
•••	Pri.: RM-1VS-101B or	60% (HIGH-HIGH)	30% (HI	GH)
	Alt.: RM-1VS-109 (5)	60% (HIGH)	30% (AI	ERT)
	(CV-1) Unit 1, R ₂ Containment/SLCRS	Vent	· :	
			30% (HI	GH)
	Pri.: RM-1VS-107B or Alt.: RM-1VS-110 (5)	60% (HIGH)	30% (Al	LERT)
	(PV-1/2), Unit 1/2, Gaseous Waste/Proce	ess Vent		
•		60% (HIGH-HIGH)	30% (HI	GH)
	Alt.: RM-1GW-109 (5)	60% (HIGH)	30% (Al	LERT)
	(CV-2), Unit 2, SLCRS Filtered Pathway	,		· · ·
• •.	2HVS-RQ109E	60% (HIGH)	30% (Al	LERT)
	(VV-2), Unit 2, SLCRS Unfiltered Pathw	/ay	:	
· · ·		60% (HIGH)	30% (A)	LERT)
	(WV-2), Unit 2, Waste Gas Storage Vau	t Vent		
•••	2RMQ-RQ303B		30% (A	LERT)
•	(DV-2), Unit 2, Decontamination Buildin	ng Vent		1.
	2RMQ-RQ301B	60% (HIGH)	: 30% (A)	LERT)
	(CB-2), Condensate Polishing Building	Vent	ation is a factor	
	2HVL-RQ112B	60% (HIGH)	30% (A	LERT)

With the monitor setpoints based on fractions of the site limit as defined above, the following criteria may be applied to determine that the dose rate due to noble gas released from the site complies with ODCM CONTROL 3.11.2.1:

The site dose rate is 30% of the site dose rate limit when any monitor is indicating a Lower Alarm.

The site dose rate is 60% of the site dose rate limit when any two monitors are indicating Lower Alarms. وي الم المراجع المراجع

The site dose rate is 60% of the site dose rate limit when any monitor is indicating an Upper Alarm.

The site dose rate is 90% of the site dose rate limit when any monitor is indicating an Upper Alarm and any other monitor is indicating a Lower Alarm.

	Beaver Valley Power Sta	tion	rocedure Num		
Title:			I Jnit:	2-ODC-2. Level Of Use:	02
	a an		1/2	In-Field	
ODCM: G	ASEOUS EFFLUENTS		Revision: 1	Page Number:	f 128
8.1.1	1.1 <u>BV-1 Setpoint Determination 1</u> <u>1 Ground Releases</u>	Based On A Calculate	ed Mix Fo	or VV-1 ar	nd CV-
	The table below gives the calcul ncpm, and provides the equivale limiting site dose rate limit (i.e.; The monitor HIGH-HIGH alarm monitor HIGH alarm setpoint ab condition shall be as follows:	nt monitor indication a 500 mrem/yr Total Bo setpoint above backg	associated order or 30 round (HI	with the m 00 mrem/y ISP), and t	nost yr skin) he
			· .		•
	BV-1 ALARM SETPO			ES BACKGR	
		ср		60%	30%
		(P)PRIMARY*	,	SITE	SITE
		MONITOR		LIMIT	LIMI
		(A) ALTERNATE		UPPER	UPPE
		MONITOR	<u>CR</u>	ALARM	
	• Continuous Release Via The BV-1	(P)RM-1VS-101B	3000	1800	900
	Auxilary Building Vent (VV-1)	(A)RM-1VS-109(5)	1470	879	440
	• Batch Release Of Containment	(P)RM-1VS-101B	1200	718	359
	Purge Via The BV-1 Auxiliary Building Vent (VV-1)	(A)RM-1VS-109(5)	1430	860	430
	• Continuous Release Via The BV-1	(P)RM-1VS-107B	6440	3870	1930
	Rx Containment/SLCRS Vent (CV-1)	(A)RM-1VS-110(5)	3380	2030	1010
-	• Batch Release Of Containment	(P)RM-1VS-107B	12,700		3810
	Purge Via The BV-1 Rx Containment/SLCRS Vent (CV-1)	(A)RM-1VS-110(5)	6660	4000	2000
		· · · · ·			_
;	*IF the primary monitor is out of serv the respective alternate monitor. The				met fo
•	The setpoints were determined using t	the following condition	ns and info	ormation:	:
	• Source terms given in ATTACHN were derived from Stone & Webst		•		
• • •	0017), ^(3.1.3.4) and computer code D sources). ATTACHMENT A Tab which are not used in site noble ga	RAGON 4 (for the co ble 2.1-1a does not incl	ntainment ude partic	vacuum p	ump 🖞
-	• Onsite meteorological data for the	e period January 1, 197	6 through	December	31, 19
	•		-		

,	Beaver V	alley Power Station	Procedure N	· · ·	
Title:			Unit:	1/2-ODC-2.02 Level Of Use:	
			1/2	In-Field Reference	
ODCM: G	ASEOUS EFFL	UENTS	Revision:	Page Number:	
		······································	<u> </u>	<u>11 of 128</u>	
· ·	· · · •	flow rate of 92,000 cfm for a VV-1 Enprised of 30,000 cfm from the conta	• • • •	•	
	• Discharge	flow rate of 49,300 cfm for a CV-1 C	Continuous Relea	se.	
£3 €. E	•	flow rate of 56,800 cfm for a CV-1 E nprised of 7,500 cfm from the contain		-	
	• Informatio	n listed under References for BV-1 C	Gaseous Effluent	Monitor Setpoints.	
• 17 • • • · · · · · · · · · · · · · · · ·		n method given in Sections 8.1.1.1.1 ints for the following operational con	_	was used to derive	
	• Continuou	s release via VV-1.			
•	Continuou	s release via CV-1.			
	• Batch rele	ase of BV-1 Containment Purge via V	VV-1.		
	• Batch rele	ase of BV-1 Containment Purge via (CV-2.		
8	8.1.1.1.1 · · · · · · · · · · · · · · · ·	<u>V-1 Mix Radionuclides</u>		۰	
•		ne "mix" (noble gas radionuclides and as determined as follows:	d composition) of	the gaseous effluen	
tongs (81) 11 - 41 - <u>44</u> 12 - 69 - 1		The gaseous source terms that are r gaseous effluent were selected. Ga of the noble gas radionuclides in th obtained from ATTACHMENT A	aseous source term ne effluent. Gaseo	ns are the radioactivi	
ne ne en e	trasse ● Prostantino Prostantino	The fraction of the total radioactivi noble gas radionuclide "i" (Si) for a the gaseous effluent was determine	each individual n		
: . , ,		$S_i = \frac{A_i}{\sum_i A_i}$		[2.1(1)-1]	
. 1 1					
	w	here:			
		 i = The total radioactivity or radioac radionuclide "i" in the gaseous e 	ctivity concentrati	on of noble gas ACHMENT A	
		Table 2.1-1a.		,	

. ..

•

1 .-

Beave	er Vallev	Power Station	Procedure Nu	, '
Title:	•		Unit: 1/2 Revision:	1/2-ODC-2.02 Level Of Use: In-Field Reference Page Number: 12 of 128
8.1.1.1.2	BV-1 Max	imum Acceptable Release R	ate (Whole Bod	
	radionuclid	um acceptable total release ra es in the gaseous effluent (Qa alculated by:	• •	•
	$Q_t = \frac{1}{(X/Q)}$	$\frac{500}{\sum_{i} K_{i} S_{i}}$		[2.1(1)-2]
· . •	where:			-
	(X/Q) _{vv}	The highest calculated a effluents released via V unrestricted area bounda ATTACHMENT F Tab	V-1 for any area ary for all sectors	at or beyond the
		= $1.03E-4$ sec/m ³ for cont	inuous releases.	
	(X/q) _{vv}	 The highest calculated s effluents released via V unrestricted area bounda ATTACHMENT M Tal 	V-1 for any area ry for all sectors	at or beyond the
·		= $3.32\text{E-4} \text{ sec/m}^3$ for batc	h release of cont	ainment purge.
•	(X/Q) _{cv} .	 The highest calculated a effluents released via C unrestricted area bounda ATTACHMENT F Tab 	V-1 for any area ary for all sectors	at or beyond the
		$= 9.24 \text{E-5 sec/m}^3 \text{ for cont}$	inuous releases.	
*	(X/q) _{cv}	The highest calculated s effluents released via C unrestricted area bound ATTACHMENT M Ta	V-1 for any area ary for any secto	at or beyond the
		= $3.08\text{E}-4 \text{ sec/m}^3$ for bate	h release of cont	ainment purge.
	Ki	The total whole body de from noble gas radionus ATTACHMENT G Tal	clide "i" (mrem/y	
	Si	= From equation $[2.1(1)-$	1] above.	-

.

• .

•

_**__**

Beaver	: Valley Po	ower Station		Procedure Nu	umber: 1/2-ODC-2.02
Title: ODCM: GASEOUS EFFLUENTS					Level Of Use: In-Field Referen Page Number:
8.1.1.1.3	BV-1 Maxim	um Acceptable R	elease Rate (Skin Expos	<u> </u>
	Qt was also de	termined based up 3000 $(L_i + 1.1M_i) S_i$			
the second second	i		•	,	
	where:				
	, L i =				ns from noble gas ⁻ n ATTACHMENT
	M _i =				ons from noble ga ATTACHMENT
ε ^τ τ <u>ε</u> τα το	1.1 . =	The ratio of the energy range of	•	-	oefficients over th mrem/mrad).
				,	
	(X/Q) =	Same as in Sect	ion 8.1.1.1.2.	i i c	
8.1.1.1.4		Same as in Sect um Acceptable R		<u>Individual</u>	<u>Radionuclide)</u>
8.1.1.1.4	BV-1 Maxim The maximum the gaseous effective	um Acceptable R n acceptable releas fluent (Q _i) for eac ent was determined	<u>elease Rate (</u> e rate (uCi/se h individual r l by:	c) of noble toble gas ra	gas radionuclide "
8.1.1.1.4	BV-1 Maxim The maximum the gaseous effue	um Acceptable R n acceptable releas fluent (Q _i) for eac ent was determined	<mark>elease Rate (</mark> e rate (uCi/se h individual r	c) of noble toble gas ra	gas radionuclide " dionuclide in the
8.1.1.1.4	BV-1 Maxim The maximum the gaseous eff gaseous efflue $\dot{Q_i} = S_i Q_i$	um Acceptable R n acceptable releas fluent (Q_i) for eac ent was determined	elease Rate (e rate (uCi/se h individual r l by:	c) of noble toble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
•	BV-1 Maxim The maximum the gaseous eff gaseous efflue $\dot{Q_i} = S_i Q_i$ NOTE: Use t	um Acceptable R n acceptable releas filuent (Q_i) for eac ent was determined he lower of the Q_i .1.3. EDE	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
• • • • • • • • • • • • • • • • • • •	BV-1 Maxim The maximum the gaseous eff gaseous efflue $\dot{Q_i} = S_i Q_i$ NOTE: Use t	um Acceptable R n acceptable releas filuent (Q_i) for eac ent was determined he lower of the Q_i .1.3. EDE	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
• • • •	BV-1 Maxim The maximum the gaseous eff gaseous efflue $\dot{Q_i} = S_i Q_i$ NOTE: Use t	um Acceptable R n acceptable releas filuent (Q_i) for eac ent was determined he lower of the Q_i .1.3. EDE	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
* 	BV-1 Maxim The maximum the gaseous effuse $\dot{Q_i} = S_i Q_i$ NOTE: Use t 8.1.1	um Acceptable R n acceptable releas filuent (Q _i) for eac ent was determined the lower of the Q _t .1.3. HOME	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
* 	BV-1 Maxim The maximum the gaseous effuse $\dot{Q_i} = S_i Q_i$ NOTE: Use t 8.1.1	um Acceptable R n acceptable releas filuent (Q _i) for eac ent was determined the lower of the Q _t .1.3. HOME	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide " dionuclide in the [2.1(1)-4
	BV-1 Maxim The maximum the gaseous efflue $\dot{Q_i} = S_i Q_i$ NOTE: Use t 8.1.1	um Acceptable R n acceptable releas filuent (Q _i) for eac ent was determined he lower of the Q _t .1.3. HOME	elease Rate (e rate (uCi/se h individual r l by: values obtain	c) of noble noble gas ra	gas radionuclide dionuclide in the [2.1(1)-4

Beave	er Valley Power Station	Procedure N	umber: 1/2-ODC-2.02
Title:		Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASEOUS	EFFLUENTS		Page Number: 14 of 128
8.1.1.1.5	BV-1 Maximum Acceptable Concentra	tions (Individu	
	The maximum acceptable radioactivity corradionuclide "i" in the gaseous effluent (C radionuclide "i" in the gaseous effluent wa	(i) for each indi	vidual noble gas
	$C_{i} = \frac{2.12E - 3 Q_{i}}{F}$ where:		[2.1(1)-5]
	F = The maximum acceptable release (cfm) as listed in S	•	ate at the point of
	2.12E-3 = Unit conversion factor (60)) sec/min x 3.53	3E-5 ft ³ /cc).
8.1.1.1.6	BV-1 Monitor Count Rate		
. .	The calculated monitor count rate (ncpm) noble gas radionuclide. CR was determined to the comparison of the comparison o	-	ound attributed to the
	$CR = \sum_{i} C_{i} E_{i}$		[2.1(1)-6)]
•	where:		
	E _i = The detection efficiency of the moni (cpm/uCi/cc) from ATTACHMENT		
8.1.1.1.7	BV-1 Monitor Setpoints		
	The monitor alarm setpoints above backg	round were det	ermined as follows:
	• The monitor HIGH-HIGH Alarm Set determined by:	point above bac	ckground (ncpm) wa
- مورقه ا ا	HHSP = 0.60 x CR		[2.1(1)-7]
	• The monitor HIGH Alarm Setpoint al determined by:	bove backgrour	nd (ncpm) was
	HSP = 0.30 x CR		[2.1(1)-8]
	NOTE: The values 0.60 for the HHSP a the total radioactivity concentra monitored pathway to ensure th exceeded due to simultaneous r	ntion that may b nat the site bour	be released via the dary limit is not

. :

	aver Valley	y Powe	r Station	<u> </u>			DC-2.02
Title:	۴ ۲				Unit:		l Of Use: In-Field Referenc
ODCM: GASEO	US EFFLUENT	S			Revisi		Number:
· · · · · · · · · · · · · · · · · · ·					L		<u>15 of 128</u>
8.1.1.2	BV-1 Setpoint and CV-1 Gro			<u>On Anal</u>	<u>ysis Prior</u>	<u>To Relea</u>	<u>se For VV-1</u>
	When the setper provide adequate be used in lieu analysis are use applies to gase maximum acce Setpoint based • Batch relea	ate flexibil of that set ed to deter ous release eptable dis on this flo	ity for operat forth in Step mine the sources es via VV-1 a charge flow r	ional need 8.1.1.1. I rce term "r and CV-1 v ate and the g the follow	s, the meth n this case nix." This when deten e associate wing opera	hod descri e, the resul s calculation rmining the ed HIGH-H	bed below ma ts of sample onal method e setpoint for HGH Alarm
							· · ·
- * , × • •,	• Batch relea	ase of Con	tainment Purg	ge via CV-	1.		1 · ·
8.1.1.2.	1 <u>BV-1 M</u>	aximum A	Acceptable R	<u>elease Ra</u>	<u>te</u>		
1		• .	ned as follow	# 14.	sharea fla		
:	CV-I				-		
i je trone t	CV-I	1 (cfm) du			-		From VV-1 and posure limit is
:	CV- calcu	1 (cfm) du Jated by: 1.06 S 7	ring purging Γ		-		
	CV-1 calcu $f = -\frac{1}{2}$	1 (cfm) du ulated by:	ring purging Γ		-		posure limit is
•	CV- calcu $f = -\frac{1}{(}$ where:	1 (cfm) du Jated by: 1.06 S 7	ring purging <u>r</u> C _i		-		posure limit is
•	CV-1 calcu $f = -\frac{1}{2}$	1 (cfm) du ulated by: 1.06 S T (X/q) $\sum_{i} K_{i}$	ring purging <u>r</u> C _i	based upor	-		posure limit is
•	CV- calcu $f = -\frac{1}{(}$ where:	$\frac{1 \text{ (cfm) du}}{1 \text{ (cfm) du}}$ $\frac{1.06 \text{ S T}}{(X/q) \sum_{i} K_{i}}$ $= 500 \text{ I}$	ring purging <u>r</u> C _i	based upor 2E-3	n the whol		posure limit is
- *	CV- calcu $f = -\frac{1}{(}$ where:	$\frac{1 \text{ (cfm) du}}{1.06 \text{ S}^{-1}}$ $\frac{1.06 \text{ S}^{-1}}{(X/q) \sum_{i} K_{i}}$ $= 500 \text{ m}$	ring purging $\frac{\Gamma}{C_i}$ mrem/yr x 2.1 mrem/yr = d E-3 = u = (based upor 2E-3 ose rate lit	n the whol mit sion facto	r body exp	posure limit is
	$CV-1$ calcu $f = -\frac{1}{0}$ where: 1.06	$\frac{1 \text{ (cfm) du}}{1 \text{ (cfm) du}}$ $\frac{1.06 \text{ S T}}{(X/q) \sum_{i} K_{i}}$ $= 500 \text{ n}$ 500 n 2.121 $= \text{Percenting}$	ring purging $\frac{\Gamma}{C_i}$ mrem/yr x 2.1 mrem/yr = d E-3 = u = (ent of site dos	2E-3 ose rate lin nit conver 60 sec/mir	mit sion facto a x 3.53E- ased via th	r 5 ft ³ /cc) nis pathwa	posure limit is [2.1(1)-17
	$CV-1$ calcu $f = -\frac{1}{0}$ where: 1.06	1 (cfm) du ulated by: 1.06 S T (X/q) $\sum_{i} K_{i}$ = 500 t 500 t 2.121 = Perco the s alarm	ring purging $\frac{\Gamma}{C_i}$ mrem/yr x 2.1 mrem/yr = d E-3 = u = (ent of site dos ite dose rate i n set point rul	2E-3 ose rate lin nit conver 60 sec/mir se rate rele s permissi les of Sect	mit sion facto a x 3.53E- ased via th ble for one	r 5 ft ³ /cc) nis pathwa	posure limit is [2.1(1)-17
	$CV-1$ calcu $f = -\frac{1}{0}$ where: 1.06	1 (cfm) du ulated by: 1.06 S T (X/q) $\sum_{i} K_{i}$ = 500 I 500 I 2.121 = Perconnection the second	ring purging $\frac{\Gamma}{C_i}$ mrem/yr x 2.1 mrem/yr = d E-3 = u = (ent of site dos ite dose rate i n set point rul imum valve f	2E-3 ose rate lin nit conver 60 sec/mir se rate rele s permissi les of Sect or T is 16	mit sion facto a x 3.53E- ased via th ble for one ion 8.1.1. based on t	r 5 ft ³ /cc) his pathwa e release p	posure limit is [2.1(1)-17 y. Up to 60% oint under the g restriction in
	$CV-1$ calcu $f = -\frac{1}{0}$ where: 1.06	1 (cfm) du ulated by: 1.06 S T (X/q) $\sum_{i} K_{i}$ = 500 I 500 I 2.12I = Perce the s alarm = Max ODC conta exce	ring purging Γ C_i mrem/yr x 2.1 mrem/yr = d E-3 = u = (ent of site dos ite dose rate i n set point rul imum valve f CM CONTRC ainment purge	2E-3 ose rate lin nit conver 60 sec/mir se rate rele s permissi les of Sect or T is 16 0L 3.11.2.1 e may be a es. (As co	mit sion facto a x 3.53E- ased via th ble for one ion 8.1.1. based on to where th veraged o ontainment	r 5 ft ³ /cc) his pathwa e release p the limiting e dose rate ver a time t air volum	posure limit is [2.1(1)-17 y. Up to 60% oint under the g restriction in

• •

. .

-

1

Beav	er Valley Power Station	Procedure Number:
Title: ODCM: GASEOUS		1/2-ODC-2.02 Unit: Level Of Use: 1/2 In-Field Reference Revision: Page Number:
<u> </u>	(X/q) _{vv} = The highest calculated s effluents released via V	short term relative concentration of V-1 for any area at or beyond the ary for all sectors (sec/m ³) from ble 2.3-36.
. *	$= 3.32\text{E-}4 \text{ sec/m}^3$	
	effluents released via C	short term relative concentration of V-1 for areas at or beyond the unrestricted ctors (sec/m ³) from ATTACHMENT M
	$= 3.08 \text{E} - 4 \text{ sec/m}^3$	
		ose factor due to gamma emissions from "i" (mrem/year/uCi/m³) from ble 2.2-11.
		vity concentration of noble gas gaseous source (uCi/cc) as determined by e released.
•	• The flow rate (f) is also determined follows:	based upon the skin exposure limit as
÷	$f = \frac{6.36 \text{ S T}}{(X/q) \sum_{i} (L_i + 1.1M_i) C_i}$	[2.1(1)-18]
*	where:	
	6.36 = 3000 mrem/yr x 2.12E-3	
	$0.50 = 5000 \operatorname{Intens} f(\mathbf{x} 2.1\mathbf{z}\mathbf{E})$	
	3000 mrem/yr = dose r	ate limit
+.	3000 mrem/yr = dose r $2.12E-3 = unit co$	ate limit onversion factor c/min x 3.53E-5 ft ³ /cc)
*-	$3000 \text{ mrem/yr} = \text{dose r}$ $2.12\text{E-3} = \text{unit co}$ $= (60 \text{ se}$ $L_i = \text{The skin dose factor due to}$	onversion factor
* •	$3000 \text{ mrem/yr} = \text{ dose r}$ $2.12\text{E-3} = \text{ unit co}$ $= (60 \text{ se}$ $L_i = \text{ The skin dose factor due to}$ $radionuclide "i" (mrem/yea)$ $2.2-11.$ $M_i = \text{ The air dose factor due to }$	onversion factor c/min x 3.53E-5 ft ³ /cc) o beta emissions from noble gas

.

•

4

•

:

•

•

.1_

Title:	v ancy	Power Station	Unit:	<u>1/2-ODC-2.02</u>
	•	ی این این میرون در این با این می از این می این میرون این این می این این این این این این می می می می این این ای این این این این این این این این این این	1/2	Level Of Use: In-Field Referen
ODCM: GASEOUS EI	FLUENT	5	Revision:	Page Number:
· · · · · · · · · · · · · · · · · · ·				_1 17_of 128_
	values b shown a	v rate (f) is determined by selecti ased on the whole body exposure bove. The actual purge flow rate is calculated (f) value or the disc	e limit, or the s (cfm) must be	kin exposure limit maintained at or
8.1.1.2.2	<u>BV-1 Mo</u>	onitor Setpoints	en an	
· · · · · ·	The moni	tor alarm setpoints above backgr	ound are deter	mined as follows:
		culated monitor HIGH-HIGH Ala attributed to noble gas radionucli	-	· · ·
		$f \sum C_i E_i$		
• • • • •	HHSP =		•	[2.1(1)-19
F. S. B. S.	where:	F		•
	WILLC.	$\mathcal{A}_{ij} = \frac{\partial \mathcal{A}_{ij}}{\partial t_{ij}} + \partial \mathcal{A$	• • • •	
engen mitere i	f =	The maximum acceptable gaseo determined in Section 8.1.1.2.1.	us discharge fl	ow rate (cfm)
•	. F' =	The maximum actual or design a release.	effluent flow ra	tte (cfm) at the poin
	··· =	92,000 cfm for VV-1		, , , ,
	. =	56,800 cfm for CV-1	a. ≹*** a tra	•
7 × 5 •	C _i =	The undiluted radioactivity cond "i" in the gaseous source (uCi/co gas to be released.		
en e	E _i =	The detection efficiency of the r (cpm/uCi/cc) from ATTACHM		
- 1 40	sectio	n a HIGH-HIGH set point has be on, the monitor HIGH Alarm Set mined as follows:		
•	HSP	= HHSP x 0.5	-	[2.1(1)-2
8.1.2 <u>BV-2 Mon</u>	nitor Alar	m Setpoint Determination		:
See Sectio	n 8.1.1 for	a description of Monitor Alarm	Setpoint Deter	minations.
		Determination Based On A Cannot Canada Determination Based On A Canada De	alculated Mix	For VV-2, CV-2,

• -

• · · • •

- ----

•

.

۰.	Beaver Valley Power	Station		Procedure N		0.00
				Unit:	1/2-ODC	
· ·				1/2		eld Referer
۸ı	GASEOUS EFFLUENTS			Revisioa:	Page Num	
		• . <u>.</u> ,		11	<u> </u>	8 of 128
	The table below gives the ncpm, and provides the eq with the most limiting site mrem/yr Skin). The HIGH the ALERT alarm setpoint operational condition shal	uivalent monitor dose rate limit (i Halarm setpoint (t (ASP) in uCi/cc	indication .e., 500 m HSP) in u	(DV) in rem/yr To Ci/cc abo	net uCi/co otal Body ve backgr	c associat or 3000 ound, an
	BV2 ALARM SET	OINTS FOR CRO		FASES		
	DV2 ALARM SEIF	OTATS LOK OKO			BACKGR	
	;	•	uCDC		herwise sp	
	·····			(411035 01	60%	30%
					SITE	SITE
					LIMIT	LIMIT
		•	CR		UPPER	LOWER
	· .	MONITOR	<u>ncpm</u>	<u>DV</u>	<u>ALARM</u>	ALARM
•	Continuous Release Via The BV-2 SLCRS Unfiltered Pathway (VV-2)	2HVS-RQ101B	8260	3.01E-4	1.81E-4	9.04E-5
•	Batch Release Of Containment Purge Via The BV-2 SLCRS Unfiltered Pathway (VV-2)	2HVS-RQ101B	2020	7.39E-5	4.43E-5	2.22E-5
•	Continuous Release Via The BV-2 SLCRS Filtered Pathway (CV-2)	2HVS-RQ109E	4320	2940 µCi/sec	1770 μCi/sec	883 μCi/sec
•	Batch Release Of Containment Purge Via The BV-2 SLCRS Filtered Pathway (CV-2)	2HVS-RQ109E	16,400	1130 μCi/sec	676 μCi/sec	338 . µCi/sec
•	Continuous Release Via The BV-2 Condensate Polishing Building Vent (CB-2)	2HVL-RQ112B	28,900	1.61E-3	9.63E-4	4.82E-4
•	Continuous Release Via The BV-2 Decontamination Building Vent (DV-2)	'2RMQ-RQ301B	56,600	3.15E-3	1.89E-3	9.44E-4
	Continuous Release Via The BV-2 Waste Gas Storage Vault Vent (WV-2)	2RMQ-RQ303B	912,000	2.58E-2	1.55E-2	7.74E-3

•

and the second second

•

•

Be	aver Valley Power Station	Procedure N	· •
Title:		Unit:	1/2-ODC-2.02 Level Of Use:
		Unit:	In-Field Referen
ODCLA CASEO		Revision:	Page Number:
ODCM: GASEO		1	19 of 128
	The setpoints were determined using the following o	conditions a	and information:
nago go e e e	• Source terms given in ATTACHMENT A Table terms were derived from Stone & Webster comp NUREG-0017) ^(3.1.3.4) and computer code DRAG vacuum pump sources). ATTACHMENT A Tab particulates and iodines, which are not used in sin calculations.	outer code (ON 4 (for ble 2.1-1b	GAS1BB (similar t the containment does not include
•	• The Containment Building Purge radionuclide n of determining an alarm setpoint for the SLCRS of the proximity of the contiguous areas.		
	• The Decontamination Building and Condensate exhaust are not expected to be radioactive. How determining an alarm setpoint, it is conservative ventilation exhaust at concentrations that would rate limits.	vever, for p ly assumed	ourposes of that Xe-133 is in t
	• The Waste Gas Storage Vault ventilation exhaus radioactive. However, the monitor alarm setpoin the ventilation exhaust radionuclide spectrum is in the system housed by the waste gas storage van ATTACHMENT A Table 2.1-1b under Gaseous	nt is based similar to sult. This s	on the assumption the gaseous invento spectrum is listed in
na serie de la composition de la compos La composition de la c	• Onsite meteorological data for the period Januar 1980.	y 1, 1976 t	hrough December
1997 - 1 997 - 1 997 - 1997	• Discharge flow rate of 23,700 cfm for a VV-2 C	ontinuous	Release.
1960 - 2007 1967 - 2007 1977 - 2007	• Discharge flow rate of 53,700 cfm for a VV-2 B Purge. This is comprised of 30,000 cfm from th cfm from the CV-2.		
* • •• ••	• Discharge flow rate of 59,000 cfm for a CV-2 C	ontinuous	Release.
	• Discharge flow rate of 59,000 cfm for a CV-2 B Purge. This is comprised of 7,500 cfm from the cfm from CV-2.		
	• Discharge flow rate of 30,556 cfm for a CB-2 C		
	• Discharge flow rate of 12,400 cfm for DV-2 Co	ntinuous R	elease.
	• Discharge flow rate of 2,000 cfm for WV-2 Cor		. -

1.

*

. ,

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02			
Title:	Unit:	Level Of Use:		
	1/2	In-Field Reference		
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 20 of 128		
 Information listed under References for BV-2 Setpoints. 	Gaseous Eff			
The calculation method given in Sections 8.1.2.1.1 derive the alarm setpoints for the following operat	-			
• Continuous release via VV-2.				
• Continuous release via CV-2.				
• Batch release of BV-2 Containment Purge via	VV-2.	•		
• Batch release of BV-2 Containment Purge via	CV-2.			
• Continuous release via CB-2.				
• Continuous release via DV-2.				
• Continuous release via WV-2.				
8.1.2.1.1 <u>BV-2 Mix Radionuclides</u>		· .		
The "mix" (noble gas radionuclides and con was determined as follows:	nposition) of	the gaseous effluent		
 The gaseous source terms that are repressively gaseous effluent were selected based on and volumetric flowrate. Gaseous source noble gas radionuclides in the effluent. obtained from ATTACHMENT A Table 	the relative te terms are to Gaseous sou	stream composition he radioactivity of the		
• The fraction of the total radioactivity in noble gas radionuclide "i" (Si) for each the gaseous effluent was determined by:	individual no	-		
$S_i = \frac{A_i}{\sum_i A_i}$		[2.1(2)-1]		
where:				
A _i = The radioactivity concentration of n gaseous effluent (for VV-2, CV-2 a A Table 2.1-1b. However, <u>SINCE</u> have a valid source term mix, <u>THE</u> concentration is assumed to be Xe-	nd WV-2) is releases via (<u>N</u> the noble (from ATTACHMENT CB-2 and DV-2 do not		

.... .

. . و مادوه الماده

.

÷

Beaver	Valley Power Station		Procedure Nu	mber: 1/2-ODC-2.02
Title:		<u> </u>	Unit:	Level Of Use:
ODOM. CASEOUS E	717 1 11751700		<u>1/2</u> Revision:	In-Field Reference Page Number:
ODCM: GASEOUS E	DDCM: GASEOUS EFFLUENTS			
8.1.2.1.2	BV-2 Maximum Acceptable Release	Rate (W	hole Bod	y Exposure)
			:/) -6 -1	
	The maximum acceptable total release radionuclides in the gaseous effluent (
`	limit was calculated by:	20 00000	upon mo	
	500 C. C. C. L.			i i
and the second	$Q_{i} = \frac{500}{(X/Q)\sum K_{i} S_{i}}$			[2.1(2)-2]
	$\left(\mathbf{x},\mathbf{y}\right) \geq \mathbf{x}_{i} \cdot \mathbf{y}_{i}$			÷
	where:			: • • •
•		_		
	(X/Q) _{vv} = The highest calculated an effluents released via VV	nnual ave	rage relati	ve concentration of
•	unrestricted area bounda			
	ATTACHMENT E Tabl	-		
	= $1.03E-4$ sec/m ³ for conti	nuous rel	eases	•
	and the second second			:
	$(X/q)_{vv}$ = The short term relative c			•
	VV-2 for any area at or t all sectors (sec/m ³) from			
v.**				
•	= $3.32E-4$ sec/m ³ for batch	1 release	of containi	ment purge.
	$(X/Q)_{cv}$ = The highest calculated as	nnual ave	erage relati	ive concentration of
	effluents released via CV			
	unrestricted area bounda ATTACHMENT F Tabl	-	•	
	•			
	$= 9.24 \text{E-5 sec/m}^3 \text{ for conti}$	inuous re	leases.	
	$(X/q)_{cv}$ = The short term relative c	concentra	tion of eff	luents released via
	CV-2 for any area at or l			
- 	all sectors (sec/m ³) from	n ATTAC	HMENT	M Table 2.3-35.
	= $3.08E-4$ sec/m ³ for batch	h release	of contain	ment purge.
· · · · · · · · · · · · · · · · · · ·	$(X/Q)_{cp}$ = The highest calculated a	nnual au	arage relat	ive concentration of
•	$(X/Q)_{cp} = The highest calculated a effluents released via Cl$			
	unrestricted area bounda	ary for all	sectors (s	
	ATTACHMENT F Tab	le 2.2-10		
	= 7.35E-5 sec/m^3 for cont	inuous re	leases.	4
	na an a	- 		-
*, * · · ·	the Bayelan Street of the	2.99 S	· •	•
				•

.

5

. . .

• • • • • •

:

: ;;

.

• , •

۰.

Beave	r Vallev	Power Station	Procedure N	umber: 1/2-ODC-2.02
e DCM: GASEOUS I		······	Unit: <u>1/2</u> Revision: 1	I/2-ODC-2.02 Level Of Use: In-Field Reference Page Number: 22 of 128
	(X/Q) _{dv}	The highest calculated annual effluents released via DV-2 for unrestricted area boundary for ATTACHMENT F Table 2.2	or any area at a r all sectors (s	or beyond the
		= 9.24E-5 sec/m ³ for continuou	s releases.	
-	(X/Q) _{wv}	The highest calculated annual effluents released via WV-2 f unrestricted area boundary fo ATTACHMENT F Table 2.2	or any area at r all sectors (s	or beyond the
·	•	= 9.24E-5 sec/m ³ for continuou	s releases.	
	K _i	The total whole body dose far noble gas radionuclide "i" (m ATTACHMENT G Table 2.2	rem/year/uCi/	
	Si	= From equation [2.1(2)-1].		
8.1.2.1.3	<u>BV-2 Ma</u>	ximum Acceptable Release Rat	e (Skin Expo	<u>sure)</u>
	Qt was als	so determined based upon the ski	n exposure lin	nit by:
	$Q_t = \frac{1}{(X/C)}$	$\frac{3000}{\text{Q})\sum_{i} (L_{i} + 1.1M_{i})S_{i}}$		[2.1(2)-3]
*	where:			
	Li ·	The skin dose factor due to b radionuclide "i"(mrem/year/u Table 2.2-11.		
4.s.	[·] M _i	The air dose factor due to gas radionuclide "i"(mrad/year/u Table 2.2-11.		
·· · ·	1.1	= The ratio of the tissue to air a energy range of the photons of	•	
	(X/Q)	= Same as in Section 8.1.2.1.2.	• .	
8.1.2.1.4	<u>BV-2 Ma</u>	aximum Acceptable Release Ra	te (Individua	l Radionuclide)
	in the ga	imum acceptable release rate (uC seous effluent (Q _i) for each noble was determined by:	-	-

:

:

Beaver	Valley Power Station	Procedure N	umber: 1/2-ODC-2.02	
Title:		Unit: Level Of Use:		
	.	1/2	In-Field Reference	
ODCM: GASEOUS EF	FLUENTS	Revision:	Page Number:	
			<u>23 of 128</u>	
	$Q_i = S_j Q_t$ and $q_i = S_i Q_t$ and $q_i = 1$ and $q_i = 1$ and $q_i = 1$		[2.1(2)-4]	
	NOTE: Use the lower of the Q _t values obtain 8.1.2.1.3.	ned in Sect	ion 8.1.2.1.2 and	
8.1.2.1.5	BV-2 Maximum Acceptable Concentration	<u>s (Individı</u>	<u> 1al Radionuclide)</u>	
te d <u>ia s</u> tra stra stra stra stra stra stra stra s	The maximum acceptable radioactivity concernation radionuclide "i" in the gaseous effluent (Ci) for radionuclide in the gaseous effluent was deter	or each ind		
		. ,	•	
ite for a family part	$C_{i} = \frac{2.12E - 3Q_{i}}{F}$		[2.1(2)-5]	
	where:	•		
	F = The maximum acceptable efflue (cfm) as listed in Section 8.1.2.1		e at the point of relea	
	2.12E-3 = Unit conversion factor (60 sec/m)	nin x 3.53E	E-5 ft ³ /cc).	
8.1.2.1.6	BV-2 Monitor Count Rate	• •	، ب ي ب بر ب	
	The calculated monitor count rate (ncpm) about noble gas radionuclide (CR) was determined	-	ound attributed to the	
	$CR = \sum C_i E_i$	•	[2.1(2)-6)]	
na da tanàna amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin' Ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'ny fisiana amin'	where:	1. 1		
At	Ei = The detection efficiency of the mon (cpm/uCi/cc) from ATTACHMEN		•	
8.1.2.1.7	BV-2 Monitor Setpoints			
	The monitor alarm setpoints above backgrou	nd were de	termined as follows:	
• • • • • • • • • • • • • •	• The monitor HIGH Alarm Setpoint abov determined by:	e backgrou	nd (uCi/cc) was	
	$HSP = \frac{0.60 \text{ x CR}}{E_{iave}}$		[2.1(2)-7]	
son e <u>i</u> n e e Seninger e se égen L	where; $E_{i ave}$ = The CR of equation [2.1(2)-6]	divided by	the sum of the C _i for	

• • • •

:

 $\mathbf{\hat{\mathbf{C}}}$

3 .

1

`:

• . .

B	eaver Valley P	ower Stati	ion	Procedure Na	
tic:				Unit:	1/2-ODC-2.02
	1 1			1/2	In-Field Reference
DCM. GASE	OUS EFFLUENTS			Revision:	Page Number:
				1	24 of 128
	• The mon determin		larm Setpoint	above backgrou	und (uCi/cc) was
	$ASP = \frac{0.30}{E_i}$		· •		[2.1(2)-8]
8.1.2.2	BV-2 Setpoint Det and CV-2 Ground		ased On Anal	lysis Prior To 1	Release for VV-2
	flexibility for operative that set forth in Sec	tional needs, t tion 8.1.2.1. I propriate nucli point for the m larm Setpoint	he method des n this case, the de mix. This aximum acce	cribed below n e results of sam calculational m ptable discharg	
	• Batch release o	f Containment	Purge via VV	-2.	
	• Batch release o	f Containment	Purge via CV	-2.	
. 8.1.2.	2.1 <u>BV-2 Maxim</u>	num Acceptab	le Release Ra	ate	
÷		m acceptable d termined as fo	-	rate from VV-2	2 or CV-2 during
		m) during purg		-	e (f) from VV-2 or dy exposure limit is
	$f = \frac{1}{(X/q)}$	06 S T) <u>Σ</u> K _i C _i	•		[2.1(2)-17]
· +	where:	•			
	1.06 =	500 mrem/yr	x 2.12E-3		
		500 mrem/yr	= dose rate	limit, whole be	ody exposure
		2.12E-3		version factor nin x 3.53E-5 f	1 ³ /cc)
	S =			. –	athway. Up to 60% of ease point under the

.

• •

•

.

- .

-

Beaver Valley Power Station			Procedure Number:	
Title:			Unit:	1/2-ODC-2.02 Level Of Use:
	4 -		1/2	In-Field Reference
ODCM: GASEOUS EF	FLUENTS	·	Revision:	Page Number: 25 of 128
an an an Argana an Argana 1999 - Landar Argana 1999 - Landar Argana	T =	Maximum value for T is 16 ODCM CONTROL 3.11.2.1 containment purge may be a exceed 960 minutes. (As co period is 60 minutes; $T = 96$	where the dos veraged over a ntainment air v	e rate for a time period not to olume change time
and end of each solution of Solution and solutions the constraint of the solution for the solution of the solution of the solution of the solution	. · · ·	The highest calculated short effluents released via VV-2 unrestricted area boundary for ATTACHMENT M Table 2	for any area at or all sectors (s	or beyond the
	=	3.32E-4 sec/m ³		··· 1
	(X/q) _{cv} =	The highest calculated short effluents released via CV-2 unrestricted area boundary for ATTACHMENT M Table 2	for any area at or all sectors (s	or beyond the
	=	3.08E-4 sec/m ³		
	K _i =	The total whole body dose f noble gas radionuclide "i" (r ATTACHMENT G Table 2	nrem/year/uCi/	
an an gao an	C _i =	The undiluted radioactivity radionuclide "i" in the gased analysis of the gas to be rele	us source (uCi	-
an an Angelera. An	• The flor follows	w rate (f) is also determined ba	used upon the s	kin exposure limit
		$\frac{6.36 \mathrm{S}\mathrm{T}}{C(\mathrm{L}_{\mathrm{i}} + 1.1\mathrm{M}_{\mathrm{i}})\mathrm{C}_{\mathrm{i}}}$		[2.1(2)-18
	where:	tali - Constanto Sector <u>a</u> ndo in Constanto Sector a Status - Sector		•
		000 mrem/yr x 2.12E-3	• . • •	;
	• •	000 mrem/yr = dose rate lim .12E-3 = unit convers		Ire
e en en attino,	-	= (60 sec/min)		c)
	r	he skin dose factor due to beta adionuclide "i" (mrem/year/uC .2-11.		

Beave	r Valley Po	wer Station	Procedure N	umber: 1/2-ODC-2.02
Title:			Unit:	Level Of Use:
	×		1/2 Revision:	In-Field Reference
ODCM: GASEOUS	EFFLUENTS		Revisiou:	Page Number: 26 of 128
		air dose factor due to onuclide "i" (mrad/yea 11.		
	(X/q) = Sam	e as above.		
-	values bas shown abo	ate (f) is determined l ed on the whole body ove. The actual purge calculated (f) value o	exposure limit, or the flow rate (cfm) must	e skin exposure limi be maintained at or
8.1.2.2.2	<u>BV-2 Monito</u>	r Setpoints		
	The monitor a	larm setpoints above	background are deter	mined as follows:
		ated monitor HIGH A ributed to the noble g	-	- ·
	$HSP = \frac{f \sum_{i} C}{F' E_{i}}$	i E _i		[2.1(2)-19]
•	where:			
•	f		cceptable containme d in Section 8.1.2.2.1	
s	, F'	= The maximum a the point of rele	actual or design efflue ase.	ent flow rate (cfm) a
		$=$ 53,700 cfm for $^{\circ}$	VV-2	
		= 59,000 cfm for	CV-2	
:	Ci	radionuclide "i"	adioactivity concentra in the gaseous source nalysis of the gas to b	e (uCi/cc) as
	E _i	•	fficiency of the monit (cpm/uCi/cc) from A	-
	E _{i ave}	= The CR of equa for the respectiv	tion [2.1(2)-6] divide	d by the sum of the

LI_

Internet Unit Lett Of Ute: Instruct Residue Page Number 27 of 128. ODCM: GASEOUS EFFLUENTS Internet Research Page Number 27 of 128. 27 of 128. NOTE: To enable maintaining a constant conversion factor from cpm to uCi/cc in the Digital Radiation Monitoring System software, the "calculated mix" is used rather than the analysis mix to calculate E above. This does not cause any change in the function of the moni- setpoint to properly control dose rate. However, the monitor indicated uCi/cc value may differ from the actual value. • When a HIGH Alarm Setpoint has been calculated according to this section, the monitor ALERT Alarm Setpoint above background (net uCi/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 BV-1/2 Monitor Alarm Setpoint Determination See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases The calculated monitor count rate above background (CR), in nepm, the monitor HIGH-HIGH alarm setpoint above background (HISP), and the monitor HIGH alarm setpoint above background (HISP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND (P)PRIMARY* SITE SITE MONITOR • Continuous Release (P)RM-1GW-108B 349E7 360E5 1.20E5 • Continuous Release Of BV-1 Decay Tanks or (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 •	Beaver Val	Beaver Valley Power Station				 102
IZ Include the relations Revision: Page Number: Revision: Page Number: 27 of 128 NOTE: To enable maintaining a constant conversion factor from cpm to UCI/cc in the Digital Radiation Monitoring System software, the "calculated mix" is used rather than the analysis mix to calculate the "calculated uCI/cc value may differ from the actual value. • When a HIGH Alarm Setpoint has been calculated according to this section, the monitor ALIERT Alarm Setpoint above background (net uCI/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 BV-1/2 Monitor Alarm Setpoint Determination See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases The calculated monitor count rate above background (IHISP), and the monitor HIGH alarm setpoint above background (HISP) or each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE SITE MONITOR LIMIT LIMIT LIMIT (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES <				Unit		
1 27 of 128 NOTE: To enable maintaining a constant conversion factor from cpm to uCi/cc in the Digital Radiation Monitoring System software, the "calculated mix" is used rather than the analysis mix to calculate E above. This does not cause any change in the function of the monisetpoint to properly control dose rate. However, the monitor indicated uCi/cc value may differ from the actual value. • When a HIGH Alarm Setpoint has been calculated according to this section, the monitor ALERT Alarm Setpoint above background (net uCi/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 BV-1/2 Monitor Alarm Setpoint Determination See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases The calculated monitor count rate above background (CR), in nepm, the monitor HIGH-HIGH alarm setpoint above background (HISP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND (A)ALTERNATE 60% 30% (P)PRIMARY* SITE MONITOR CALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 • Batch Release Of (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 • Batch Release Of (P)R				1/2		
1 1 27 of 128 NOTE: To enable maintaining a constant conversion factor from cpm to UC/cc in the Digital Radiation Monitoring System software, the "calculated mix" is used rather than the analysis mix to calculate E above. This does not cause any change in the function of the monitor indicated UC/cc value may differ from the actual value. • When a HIGH Alarm Setpoint has been calculated according to this section, the monitor ALERT Alarm Setpoint above background (net uCl/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 BV-1/2 Monitor Alarm Setpoint Determination See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases The calculated monitor count rate above background (CR), in nepm, the monitor HIGH-HIGH alarm setpoint above background (HISP), and the monitor HIGH alarm setpoint above background (HISP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND G0% 30% (P)PRIMARY* SITE MONITOR LIMIT UMIT LIMIT (A)ALTERNATE UPPER WON ROR Continuous Release (P)RM-1GW-108B 3.49E7 0.0217 0.025 1.20E5 BV-1/2 ALARM SETPOINTS FOR CR ALARM ALARI • Continuous Release (P)RM-1GW-1	ODCM: GASEOUS EFFLUE	ENTS		Revision:	Page Numbe	ж.
uCi/cc in the Digital Radiation Monitoring System software, the "calculated mix" is used rather than the analysis mix to calculate the above. This does not cause any change in the function of the moni- setpoint to properly control dose rate. However, the monitor indicated uCi/cc value may differ from the actual value. • When a HIGH Alarm Setpoint has been calculated according to this section, the monitor ALERT Alarm Setpoint above background (net uCi/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 <u>BV-1/2 Monitor Alarm Setpoint Determination</u> See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2</u> <u>Elevated Releases</u> The calculated monitor count rate above background (CR), in nepm, the monitor HIGH-HIGH alarm setpoint above background (HSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: <u>BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES</u> cpm ABOVE BACKGROUND (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT (A)ALTERNATE UPPER LOWE <u>MONITOR CR</u> ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-108B 3.93E5 2.36E5 1.20E5 BV-2 Storage Tanks *IE the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:				1	27	of 128
section, the monitor ALERT Alarm Setpoint above background (net uCi/cc) is determined as follows: ASP = HSP x 0.5 [2.1(2)-20 8.1.3 <u>BV-1/2 Monitor Alarm Setpoint Determination</u> See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2</u> <u>Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARI • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	NOT	uCi/cc in the Digital Radia "calculated mix" is used ra above. This does not cause setpoint to properly control	tion Mon ther than e any cha l dose rat	itoring Sy the analys nge in the e. Howeve	stem softwar is mix to cal function of t er, the monit	re, the lculate E _i the monit
 8.1.3 <u>BV-1/2 Monitor Alarm Setpoint Determination</u> See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARI Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	Start Start St	ection, the monitor ALERT Ala	rm Setpo			
See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT IMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-108B 3.93E5 2.36E5 1.18E55 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks * The the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	A	$ASP = HSP \times 0.5$	••	• •.	[2	2.1(2)-20]
See Section 8.1.1 for a description of Monitor Alarm Setpoint Determination. 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT IMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks * The the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	813 RV-1/2 Monitor	Alorm Sotnoint Determinatio		· ·		
 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LOWE <u>MONITOR</u> CR ALARM ALARM Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	8.1.5 <u>D</u> 4 -1/2 M0mt0m	Alar in Serpoint Determinatio	<u>/11</u>			
 8.1.3.1 <u>BV-1/2 Setpoint Determination Based On A Calculated Mix For PV-1/2 Elevated Releases</u> The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LIMIT LOWE <u>MONITOR</u> CR ALARM ALARM Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	See Section 8.1.1	for a description of Monitor A	larm Sett	point Deter	mination.	4 1 1
Elevated Releases The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE MONITOR LIMIT MONITOR (P)PRIMARY* SITE MONITOR LIMIT (P)PRIMARY* SITE MONITOR LIMIT (P)PRIMARY* SITE MONITOR LIMIT (A)ALARM ALARM (A)ALARM ALARM (A)ARM-1GW-108B AJ98E5 SIGES (P)RM-1GW-108B AJ98E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) *IE the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for th			•			3
Elevated Releases The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE MONITOR LIMIT MONITOR (P)PRIMARY* SITE MONITOR LIMIT (P)PRIMARY* SITE MONITOR (P)PRIMARY*	8.1.3.1 BV-1/2 Set	tpoint Determination Based O	n A Cal	culated M	ix For PV-1	۱ /2
The calculated monitor count rate above background (CR), in ncpm, the monitor HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARI • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	· · · · · · · · · · · · · · · · · · ·					
HIGH-HIGH alarm setpoint above background (HHSP), and the monitor HIGH alarm setpoint above background (HSP) for each operational condition are shown the following Table: BV-1/2 ALARM SETPOINTS FOR ELEVATED RELEASES cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE MONITOR LIMIT LIMIT (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 • Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:						
cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT (A)ALTERNATE UPPER LOWE <u>MONITOR</u> CR ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:			.		_	
cpm ABOVE BACKGROUND 60% 30% (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT (A)ALTERNATE UPPER LOWE <u>MONITOR</u> CR ALARM ALARM • Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	HIGH-HIG alarm setpo	BH alarm setpoint above backgro pint above background (HSP) for	ound (HI	ISP), and (the monitor	HIGH
 (P)PRIMARY* SITE SITE <u>MONITOR</u> LIMIT LIMIT (A)ALTERNATE UPPER LOWE <u>MONITOR</u> CR ALARM ALARM (A)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 6.00E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi	GH alarm setpoint above backgro oint above background (HSP) fo ing Table:	ound (HH or each og	ISP), and (perational of	the monitor is condition are	HIGH
MONITOR (A)ALTERNATE MONITORLIMIT UPPER UPPER LOWE MONITOR• Continuous Release (A)RM-1GW-108B3.49E7 3.60E53.60E5 1.20E5• Batch Release Of (A)RM-1GW-109(5)2.61E7 2.61E73.60E5 3.60E51.20E5 1.20E5• Batch Release Of BV-1 Decay Tanks or BV-2 Storage Tanks(A)RM-1GW-108B (A)RM-1GW-109(5)3.93E5 7.87E62.36E5 3.60E51.18E5 1.20E5*IF the primary monitor is out of service, met for the respective alternate monitor. The alternate setpoints shall be utilized:*III alternate setpoints shall be attributed	HIGH-HIG alarm setpo the followi	GH alarm setpoint above backgro oint above background (HSP) fo ing Table:	ound (HI or each op OR ELE	HSP), and (perational of VATED R	the monitor is condition are ELEASES	HIGH e shown i
MONITOR (A)ALTERNATE MONITORLIMIT UPPER UPPER LOWE MONITOR• Continuous Release (A)RM-1GW-108B3.49E7 3.60E53.60E5 1.20E5• Batch Release Of (A)RM-1GW-109(5)2.61E7 2.61E73.60E5 3.60E51.20E5 1.20E5• Batch Release Of BV-1 Decay Tanks or BV-2 Storage Tanks(A)RM-1GW-108B (A)RM-1GW-109(5)3.93E5 7.87E62.36E5 3.60E51.18E5 1.20E5*IF the primary monitor is out of service, met for the respective alternate monitor. The alternate setpoints shall be utilized:*III alternate setpoints shall be attributed	HIGH-HIG alarm setpo the followi	GH alarm setpoint above backgro oint above background (HSP) fo ing Table:	ound (HI or each op OR ELE	HSP), and (perational of VATED R	the monitor is condition are ELEASES E BACKGE	HIGH e shown i
 (A)ALTERNATE UPPER LOWE MONITOR CR ALARM ALARM Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi	GH alarm setpoint above backgro oint above background (HSP) fo ing Table: SV-1/2 ALARM SETPOINTS F	ound (HI or each op OR ELE c	HSP), and (perational of VATED R	the monitor i condition are ELEASES /E BACKGE	HIGH e shown i ROUND
MONITORCRALARMALARM• Continuous Release(P)RM-1GW-108B3.49E73.60E51.20E5• Batch Release Of(P)RM-1GW-109(5)2.61E73.60E51.20E5• Batch Release Of(P)RM-1GW-108B3.93E52.36E51.18E5BV-1 Decay Tanks or(A)RM-1GW-109(5)7.87E63.60E51.20E5BV-2 Storage Tanks******IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	HIGH-HIG alarm setpo the followi	GH alarm setpoint above backgro oint above background (HSP) fo ing Table: EV-1/2 ALARM SETPOINTS F (P)PRIMAL	ound (HI or each op OR ELE c RY*	HSP), and (perational of VATED R	the monitor is condition are ELEASES /E BACKGF 	HIGH e shown i ROUND 30% SITE
 Continuous Release (P)RM-1GW-108B 3.49E7 3.60E5 1.20E5 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi	6H alarm setpoint above backgro oint above background (HSP) fo ing Table: EV-1/2 ALARM SETPOINTS F (P)PRIMAI <u>MONITC</u>	ound (HI or each op OR ELE c RY* <u>)R</u>	HSP), and (perational of VATED R	the monitor is condition and ELEASES YE BACKGH 60% SITE LIMIT	HIGH e shown i ROUND 30% SITE LIMIT
 (A)RM-1GW-109(5) 2.61E7 3.60E5 1.20E5 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi	6H alarm setpoint above backgro oint above background (HSP) fo ing Table: W-1/2 ALARM SETPOINTS F (P)PRIMAL <u>MONITC</u> (A)ALTERI	ound (HI or each op OR ELE c RY* <u>)R</u> NATE	HSP), and (perational of VATED R pm ABOV	the monitor is condition are ELEASES /E BACKGE 60% SITE LIMIT UPPER	HIGH e shown i ROUND 30% SITE LIMIT LOWER
 Batch Release Of (P)RM-1GW-108B 3.93E5 2.36E5 1.18E5 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, THEN ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi B	6H alarm setpoint above backgro oint above background (HSP) fo ing Table: W-1/2 ALARM SETPOINTS F (P)PRIMAL <u>MONITC</u> (A)ALTERI <u>MONITC</u>	ound (HI or each op OR ELE c RY* <u>)R</u> NATE <u>OR</u>	HSP), and the perational of the perational of the perational of the perate of the pera	the monitor is condition are ELEASES /E BACKGF 60% SITE LIMIT UPPER <u>ALARM</u>	HIGH e shown i ROUND 30% SITE LIMIT LOWER <u>ALARM</u>
 BV-1 Decay Tanks or (A)RM-1GW-109(5) 7.87E6 3.60E5 1.20E5 BV-2 Storage Tanks *IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized: 	HIGH-HIG alarm setpo the followi B	H alarm setpoint above backgro oint above background (HSP) fo ing Table: W-1/2 ALARM SETPOINTS F (P)PRIMAL MONITO (A)ALTERI MONITO uous Release (P)RM-1GW-	ound (HF or each of OR ELE c RY* <u>OR</u> NATE <u>OR</u> 108B	ISP), and the perational of the perational of the perational of the perate of the pera	the monitor is condition are ELEASES TE BACKGH 60% SITE LIMIT UPPER <u>ALARM</u> 3.60E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER <u>ALARM</u> 1.20E5
BV-2 Storage Tanks * <u>IF</u> the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	HIGH-HIG alarm setpo the followi B	H alarm setpoint above backgro oint above background (HSP) fo ing Table: W-1/2 ALARM SETPOINTS F (P)PRIMAL MONITO (A)ALTERI MONITO uous Release (P)RM-1GW- (A)RM-1GW	ound (Hi or each op OR ELE c RY* <u>OR</u> NATE <u>OR</u> 108B -109(5)	ISP), and the perational of the perational of the perational of the perated by th	the monitor is condition and ELEASES TE BACKGR 60% SITE LIMIT UPPER ALARM 3.60E5 3.60E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5
IF the primary monitor is out of service, <u>THEN</u> ODCM CONTROL 3.3.3.10 is met for the respective alternate monitor. The alternate setpoints shall be utilized:	HIGH-HIG alarm setpo the followi B • Contin • Batch I	H alarm setpoint above backgro oint above background (HSP) fo ing Table: V-1/2 ALARM SETPOINTS F (P)PRIMAL <u>MONITC</u> (A)ALTERI <u>MONITC</u> uous Release (P)RM-1GW- (A)RM-1GW- Release Of (P)RM-1GW-	ound (HF or each op OR ELE c RY <u>)R</u> NATE <u>)R</u> 108B -109(5) -108B	ISP), and the perational of the perational of the perational of the peration o	the monitor is condition and ELEASES /E BACKGH 60% SITE LIMIT UPPER <u>ALARM</u> 3.60E5 3.60E5 2.36E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5 1.18E5
utilized:	HIGH-HIG alarm setpo the followi B • Contin • Batch I BV-1 I	H alarm setpoint above backgro oint above background (HSP) fo ing Table: V-1/2 ALARM SETPOINTS F (P)PRIMAL MONITO (A)ALTERI MONITO (A)ALTERI MONITO (A)RM-1GW- (A)RM-1GW- Decay Tanks or (A)RM-1GW-	ound (HF or each op OR ELE c RY* <u>)R</u> NATE <u>)R</u> 108B -109(5) -108B	ISP), and the perational of the perational of the perational of the peration o	the monitor is condition and ELEASES /E BACKGH 60% SITE LIMIT UPPER <u>ALARM</u> 3.60E5 3.60E5 2.36E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5
	HIGH-HIG alarm setpo the followi B • Contin • Batch I BV-1 I BV-2 S *IF the pri	H alarm setpoint above backgro oint above background (HSP) for ing Table: W-1/2 ALARM SETPOINTS F (P)PRIMAL MONITC (A)ALTERI MONITC (A)ALTERI MONITC (A)RM-1GW- (A)RM-1GW- Decay Tanks or (A)RM-1GW- Storage Tanks mary monitor is out of service,	ound (HF or each of OR ELE c RY* <u>DR</u> NATE <u>DR</u> 108B -109(5) 108B -109(5) THEN O	ISP), and operational operational operational operational operational operational operational operation of the second structure operation of the second structure operation oper	the monitor i condition are ELEASES TE BACKGH 60% SITE LIMIT UPPER ALARM 3.60E5 3.60E5 2.36E5 3.60E5 3.60E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5 1.20E5 1.20E5 1.20E5
The estimate wave determined using a calculated mix from the ECAD and disable	HIGH-HIG alarm setpo the followi B • Contin • Batch I BV-1 I BV-2 S *IF the pri met for t	H alarm setpoint above backgro oint above background (HSP) fo ing Table: V-1/2 ALARM SETPOINTS F (P)PRIMAL MONITO (A)ALTERI MONITO (A)ALTERI MONITO (A)RM-1GW- Decay Tanks or (A)RM-1GW- Storage Tanks mary monitor is out of service, he respective alternate monitor.	ound (HI or each op OR ELE c RY* <u>OR</u> NATE <u>OR</u> 108B -109(5) 108B -109(5) <u>THEN</u> O The alte	ISP), and the perational of the perational of the perational of the perate of the pera	the monitor i condition are ELEASES TE BACKGH 60% SITE LIMIT UPPER ALARM 3.60E5 3.60E5 2.36E5 3.60E5 3.60E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5 1.20E5 1.20E5 1.20E5
The setpoints were determined using a calculated mix from the FSAR and discha	HIGH-HIG alarm setpo the followi B • Contin • Batch I BV-1 I BV-2 S *IF the pri met for t	H alarm setpoint above backgro oint above background (HSP) fo ing Table: V-1/2 ALARM SETPOINTS F (P)PRIMAL MONITO (A)ALTERI MONITO (A)ALTERI MONITO (A)RM-1GW- Decay Tanks or (A)RM-1GW- Storage Tanks mary monitor is out of service, he respective alternate monitor.	ound (HI or each op OR ELE c RY* <u>OR</u> NATE <u>OR</u> 108B -109(5) 108B -109(5) <u>THEN</u> O The alte	ISP), and the perational of the perational of the perational of the perate of the pera	the monitor i condition are ELEASES TE BACKGH 60% SITE LIMIT UPPER ALARM 3.60E5 3.60E5 2.36E5 3.60E5 3.60E5	HIGH e shown i ROUND 30% SITE LIMIT LOWER ALARM 1.20E5 1.20E5 1.20E5 1.20E5 1.20E5

۰.

·

• •

••

:

.

1

.

.

Beav	er Valley Power Station	Procedure No	umber: 1/2-ODC-2.02
ົາປະ		Unit; 1/2	Level Of Use: In-Field Reference
DDCM: GASEOUS	EFFLUENTS	Revision:	Page Number: 28 of 128
	ne calculational method below was used to de llowing operational conditions:	erive the monito	r setpoints for the
•	Continuous release via PV-1/2.		
•	Batch release of BV-1 or BV-2 Waste Gas	Decay Tank via	PV-1/2.
•	Batch release of BV-1 or BV-2 Containme the above table. However, if it is necessary Containment Purge via this release point, the accordance with Section 8.1.3.2.	y to perform a B	V-1 or BV-2
8.1.3.1.1	BV-1/2 Mix Radionuclides		•
	The "mix" (noble gas radionuclides and was determined as follows:	composition) of	the gaseous effluent
. "	• The gaseous source terms that are regaseous effluent were evaluated. Garadioactivity of the noble gas radionus source terms can be obtained from A 2.1-1b.	seous source ter iclides in the eff	ms are the luent. The gaseous
-	• The fraction of the total radioactivity noble gas radionuclide "i" (Si) for ea the gaseous effluent was calculated b	ch individual no	
•	$S_i = \frac{A_i}{\sum_i A_i}$		[2.1-9]
· · · ·	where:		
** -	A _i = The total radioactivity or radio radionuclide "i" in the gaseous Table 2.1-1a and 2.1.1b.	•	
8.1.3.1.2	BV-1/2 Maximum Acceptable Release	Rate (Whole B	ody Exposure)
	The maximum acceptable total release r radionuclides in the gaseous effluent (Q limit was determined by:		
:	$Q_{t} = \frac{500}{\sum V_{i} S_{i}}$	· .	[2.1.10]

۰.

÷

where:

-

_∟__

Beave		1/2-ODC-2.02	
Title:	j titit vet en and e En and en and En and en and	Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASEOUS E	FFLUENTS	Revision:	Page Number: 29 of 128
	 V_i = The constant for noble gas radionucle radiation from the elevated finite plu ATTACHMENT G Table 2.2-12. S_i = From equation [2.1-9] <u>BV-1/2 Maximum Acceptable Release F</u>Q_t was also determined based upon the skill 	ime (mrem/yea tate (Skin Exp	ur/uCi/sec) from bosure)
·	$Q_{t} = \frac{3000}{\sum_{i} [L_{i}(X/Q)_{pv} + 1.1B_{i}]S_{i}}$	in exposure ini	[2.1-11]
		· · · · · · ·	
	where:		
· :	L _i = The skin dose factor due to b radionuclide "i"(mrem/year/ Table 2.2-11.		
	(X/Q) _{pv} = The highest calculated annua effluents releases via PV-1/2 unrestricted area boundary for ATTACHMENT F Table 2.2	for any area a or all sectors (s 2-6.	t or beyond the
	$= 2.31E-6 \text{ sec/m}^3 (0.5 - 1.0 \text{ min})$	les)	
	(X/q) _{pv} = The highest calculated short effluents released via PV-1/2 unrestricted area boundary for ATTACHMENT N Table 2	2 for any area a or all sectors (s	at or beyond the
	$= 1.07 \text{E-5 sec/m}^3 (0.5 - 1.0 \text{ m})$	iles)	
аларанан ал Аларанан аларанан алар	B _i = The constant for long term r noble gas radionuclide "i" ac dose from the elevated finite ATTACHMENT G Table 2	counting for the plume (mrad/	he gamma radiation
8.1.3.1.4	<u>BV-1/2 Maximum Acceptable Release l</u>	Rate (Individu	al Radionuclide)
	The maximum acceptable release rate (uC the gaseous effluent (Q_i) for each individu gaseous effluent was determined by:		
	$Q_i = S_i Q_t$		- [2.1-12]
1			[=]

.

- -. . .

. .س., ۱

÷

Beav	er Valley Power Station	Procedure N	
litle:		Unit:	1/2-ODC-2.02 Level Of Use:
	· .	1/2 Revision:	In-Field Reference Page Number:
ODCM: GASEOUS	EFFLUENTS		
	NOTE: Use the lower of the Q _t values of 8.1.3.1.3.	btained in Sect	ion 8.1.3.1.2 and
8.1.3.1.5	BV-1/2 Maximum Acceptable Concentr	<u>ations (Indivi</u>	dual Radionuclide)
	The maximum acceptable radioactivity co radionuclide "i" in the gaseous effluent (C radionuclide in the gaseous effluent was d	i) for each indi	•
· .	$C_i = \frac{2.12E - 3Q_i}{F}$		[2.1-13] ⁻
	where:		
	2.12E-3 = Unit conversion factor (60 s)	ec/min x 3.53E	-5 ft ³ /cc).
	F = The maximum acceptable ef (cfm) as listed in Section 8.1		e at the point of release
8.1.3.1.6	BV-1/2 Monitor Count Rate		
	The calculated monitor count rate (ncpm) noble gas radionuclide. (CR) was determ		und attributed to the
	$CR = \sum_{i} C_{i} E_{i}$		[2.1-14]
	where:		_
• .	E_i = The detection efficiency of the r (cpm/uCi/cc) from ATTACHM		-
8.1.3.1.7	BV-1/2 Monitor Setpoints		
- 	The monitor alarm setpoints above backg	round were det	ermined as follows:
	• The monitor HIGH-HIGH Alarm Setu determined by:	point above bac	kground (ncpm) was
	HHSP = 0.60 x CR		[2.1-15]
	 HHSP = 0.60 x CR The monitor HIGH Alarm Setpoint al determined by: 	bove backgrour	•

:

:

•• •

Be	eaver Valley Power Station	Procedure	Number: 1/2-ODC-2.02
Title:		Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASE	DUS EFFLUENTS		Page Number: 31 of 128
8.1.3.2	<u>BV-1/2 Setpoint Determination Based (</u> <u>1/2 Elevated Releases</u>	<u> Dn Analysis Prior 7</u>	<u> To Release For PV-</u>
	The following calculation method applies Waste/Process Vent when the "calculated operational flexibility. This method is use maximum acceptable discharge flow rate Setpoint based on this flow rate for the BY GW-108B) or alternate (RM-1GW-109 C conditions:	mix" does not provi ed to determine the s and the associated H V-1/2 Gaseous Wast	ide adequate setpoint for the HGH-HIGH Alarm te Gas Monitor (RM-
	• Continuous release via PV-1/2.		
			- DV 1/2
- •.	• Batch release of BV-1 or BV-2 Waste	Gas Decay Tank vi	a PV-1/2.
	• Batch release of BV-1 or BV-2 Conta	inment Purge via PV	<i>V</i> -1/2.
8.1.3.2	BV-1/2 Maximum Acceptable Rel	lease Rate	
14 - Constant 17 - Al (1997) 19 - Al (1997)	Determine the maximum acceptable the Process Vent for the analyzed m		e for the release from
n en service de la compo la Francisca de la Brancisca	• The maximum acceptable gased Vent (cfm) based upon the who		
• •	$f = \frac{1.06 \text{ S}}{\sum_{i} V_{i} C_{i}}$.•	[2.1-21]
↓	where:		, ,,*••• • ;
n 1. iv. <u>1</u> . verskov stra 1. iv. 1. verskov stra	1.06 = 500 mrem/yr x 2.12E-3	• • • • • •	-
• • ∀ *3 .	500 mrem/yr = dose	rate limit, whole be	dy exposure
- 196 ar	2.12E-3 = unit	conversion factor	
	2 (00 s	ec/min x 3.53E-5 ft	(7CC)
· · · · ·	S = Percent of site dose rat the site dose rate is per alarm setpoint rules o	ermissible for one re	
•	V _i = The constant for nobl gamma radiation from		

~ *

Beaver	Valley	Power Station	· · · · ·	Procedure No	umber: 1/2-ODC-2.02
Title:		<u> </u>		Unit:	Level Of Use:
ODCM: GASEOUS EFF	LUENTS	5	<u> </u>	1/2 Revision:	In-Field Reference Page Number: 32 of 128
	C _i	The undiluted radio radionuclide "i" in analysis of the gas	the gaseous so		f noble gas (cc) as determined by
•	Based up	on the skin exposure li	mit, (f) is calcı	lated by:	
 	$f = \overline{\Sigma \Pi}$	$\frac{6.36 \text{ S}}{(X/Q)_{pv} + 1.1B_i]C_i}$			[2.1-22]
	i - 1	(•= <)pv • • • • • • • • • • • • • • • • • • •			
where:	-				•
6.30		3000 mrem/yr x 2.12			
	300	·	ose rate limit, s	-	ure
			nit conversion 50 sec/min x 3.	•	cc)
Li	=	The skin dose factor radionuclide "i" (mr Table 2.2-11.			
· (X/	Q) _{pv} =	The highest calculate effluents released via unrestricted area bou ATTACHMENT F	a PV-1/2 for ar undary for all s	ny area at o	or beyond the
•	=	2.31E-6 sec/m ³			
(X/	/q) _{pv} =	•	for any area at	or beyond	ncentration of effluents I the unrestricted area CHMENT N Table
t star	. =	1.07E-5 sec/m ³			
B _i	=		de "i" accounti lume (mrad/yea	ing for the	han 500 hrs/year) for gamma radiation from) from
and b	based on t	ller of the calculated f he skin exposure limit maintained at or below	shown above.	The actua	

· •

: :

Beaver	Valley Power Station	Procedure Nu	1/2-ODC-2.02
Title:	• • • • • • • • • • • • • • • • • • •	Unit:	Level Of Use:
ODCM: GASEOUS EF	TET TIENTES	1/2 Revision:	In-Field Refere Page Number:
			<u>33 of 128</u>
8.1.3.2.2	BV-1/2 Monitor Setpoints The monitor alarm setpoints above background	d are detern	
	• The calculated monitor HIGH-HIGH Alarr (ncpm) attributed to the noble gas radionuc	n Setpoint lides is de	above backgroun termined by:
	$HHSP = \frac{f \sum C_i E_i}{F'}$		[2.1-23]
where:		·` ,	
	f = The maximum acceptable gaseous di determined in Section 8.1.3.2.1.		ow rate (cfm)
	F' = The maximum actual or design effluence release.	ent flow ra	te (cfm) at the po
	= 1450 cfm for PV-1/2		`.
t statila	C _i = The undiluted radioactivity of noble gaseous source (uCi/cc) as determine released.		
	E _i = The detection efficiency of the respe or (RM-1GW-109 CH 5) for noble g	as radionu	clide "i" (cpm/uC
		••••	,
•	When a HIGH-HIGH Alarm Setpoint has been section the monitor HIGH Alarm setpoint about determined by:	ve backgro	
	$HSP = HHSP \times 0.5$		[2.1-24]
	na se an entre de très et se et se an anne de la service. Nertasti esta a se recentre de la service.	•	† • • •
		···: -	۰.
· · · · · ·	an a		•
	a da anti-arresta da anti-arresta da anti- arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti- arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti-arresta da anti-	с. Макалария Ма	 -
ана така "м	the second states and the second	•	
l	<u></u>	<u> </u>	

•

.

· · · · ·	Bea	ver	Valley Power Station	Procedure N	umber: 1/2-ODC-2.02
Title:				Unit	Level Of Use:
ODCM: C	ACTOT			1/2 Revision:	In-Field Reference Page Number:
					34 of 128
82 <u>C</u>	omplian	<u>ce Wi</u>	th 10 CFR 20 Dose Rate Limits (ODCM (CONTROL	<u>31121)</u>
8.2.1	Dose	<u>Rate I</u>	Due To Noble Gases		
	limite efflue releas	d to 50 nts are e, the	e in unrestricted areas resulting from noble 00 mrem/yr to the total body and 3,000 mrem the total of BV-1 and BV-2 specific ground PV-1/2 Gaseous Waste/Process Vent. Based quations are used to show compliance with C	n/yr to the sk releases and l upon NUR	tin. Site gaseous 1 a shared elevated EG-0133 ^(3.1.3.1) the
	Σ[V _i Q	_{is} + K _i	$(\overline{X/Q})_{v} Q_{iv}] < 500 \text{ mrem/yr}$		[2.2-1]
	-	X/Q),	+1.1B _i]Q _{is} +[L _i +1.1M _i]($\overline{X/Q}$) _v Q _{iv}] \leq 300	00 mrem/yr	[2.2-2]
	where:			•	
	K _i	=	The total body dose factor due to gamma er gas radionuclide "i", mrem/year/uCi/m ³ .	nissions for (each identified noble
	L _i	=	The skin dose factor due to beta emissions radionuclide "i", mrem/year/uCi/m ³ .	for each iden	tified noble gas
	Mi	=	The air dose factor due to gamma emission radionuclide "i", mrad/year/uCi/m ³ .	s for each ide	entified noble gas
	V _i	=	The constant for each identified noble gas r gamma radiation from the elevated finite pl		-
	B _i	Ξ	The constant for long-term releases (greater identified noble gas radionuclide "i" account the elevated finite plume, mrad/year/uCi/se	nting for the	•
· to	1.1	=	The ratio of the tissue to air absorption coe the photon of interest, mrem/mrad.	fficients over	r the energy range of
	Qis	=	The release rate of noble gas radionuclide standing stack, uCi/sec.	i" in gaseous	s effluents from free-
	Qiv	=	The release rate of noble gas radionuclide ' releases, uCi/sec.	i" in gaseou	s effluents from all ve
	$(\overline{X/})$	\overline{Q}) _s =	The highest calculated annual average related beyond the unrestricted area boundary for the second s		-
	(\overline{X})	\overline{Q}) _v =	The highest calculated annual average relationships beyond the unrestricted area boundary for the second se		_

•

|_**|**__

Douve	er Valley Power Station	Procedure No	1/2-ODC-2.02
fitle:		Unit:	Level Of Use:
ODCM: GASEOUS I		Revision:	In-Field Reference Page Number:
JDCM: GASEOUS I	277LUEN15	1	35 of 128
	ver Valley site gaseous releases may occur hown in ATTACHMENT P Figure 2.4.2:	from the followi	ng Release Points
RP 1 & 4.	The BV-1 Auxiliary Building Vent and the atop the Auxiliary Buildings (VV-1 and V		Infiltered Pathway
RP 2 & 5.	The BV-1 Rx Containment/SLCRS Vent a atop the Containment Domes (CV-1 and C		CRS Filtered Pathw
RP 3.	The BV-1/2 Gaseous Waste/Process Vent	atop the BV-1 C	Cooling Tower (PV-1
RP 6.	The BV-2 Condensate Polishing Building	Vent (CB-2)	۔ م
RP 7.	The BV-2 Waste Gas Storage Vault Vent	(WV-2)	•
RP 8.	The BV-2 Decontamination Building Ven	nt (DV-2)	•
RP 9.	The BV-2 Turbine Building Vent (TV-2)	1 y 1 y y 1 y y y	
BV-2 t ventila	· .	nt Purges and Co	ontiguous Area
source (SLCR	nt from the Release Point 2 & 5 are assume of these releases is the Supplementary Lea RS). At BV-2 the source of these releases is ation. It is also possible to release Contain	k Collection and normal Auxilia	Release System
• Releas	e Points 6, 7, 8 and 9 are not normally radio	oactive release p	oints.
• The ef	•	d the courses of	· · · · · · · · · · · · · · · · · · ·
	fluent from Release Point 3 are elevated, ar Condenser Air Ejectors, the Waste Gas Dec s.		
Main G Pumps *- Noble gas complianc 2] are exp for release	Condenser Air Ejectors, the Waste Gas Dec	ay Tanks and the Points 1 through 23.11.2.1.a, Equ for the site. Note	e Containment Vacuu 5 above. To show ations [2.2-1] and [2 e that the expressions
Main G Pumps Noble gas complianc 2] are exp for release points are	Condenser Air Ejectors, the Waste Gas Dec s. releases may normally occur from Release with the site limits of ODCM CONTROI ressed in terms of the actual release points f points 6, 7, 8 and 9 are included for use if	ay Tanks and the Points 1 through 23.11.2.1.a, Equ for the site. Note	e Containment Vacuu 5 above. To show ations [2.2-1] and [2 e that the expressions
Main G Pumps Noble gas complianc 2] are exp for release points are	Condenser Air Ejectors, the Waste Gas Dec s. releases may normally occur from Release with the site limits of ODCM CONTROI ressed in terms of the actual release points f points 6, 7, 8 and 9 are included for use if identified in the future.	ay Tanks and the Points 1 through 23.11.2.1.a, Equ for the site. Note	e Containment Vacuu 5 above. To show ations [2.2-1] and [2 e that the expressions

. •

ł

1

:	Beave	r Valle	ey Power	Station		Procedure Nu	imber: 1/2-ODC-2.02
itle: DDCM: GA	· · · · · · · · · · · · · · · · · · ·	· · · ·	<u> </u>			Unit: 1/2 Revision:	Level Of Use: In-Field Reference Page Number:
<u> </u>	Q _i _{wv2} (X/Q) _{pv} (X/Q) _{cv}	= Rele = High the l = High CV-	ease rate of rate nest calculate PV-1/2, sec/r nest calculate 1 and CV-2,	n ³ . ed annual average sec/m ³ .	e relative o e relative o	concentrati concentrati	<u>37 of 128</u> on for releases from on for releases from
	(X/Q) _{vv}	VV-	-1 and VV-2,	, sec/m ³ .		4 <u>-</u>	on for releases from
	$(\overline{X/Q})_{cb}$ $(\overline{X/Q})_{dv}$ $(\overline{X/Q})_{wv}$	CB- = Hig DV = Hig	2, sec/m ³ . hest calculate -2, sec/m ³ .	ed annual average	e relative o	concentrat	ion for releases for ion for releases for ion for releases for
	the entire All other For the sin various co determine For Relea	purge (no terms ren te, 4 poter ombinatione the contri use Modes	ot to exceed 9 main the same ntial modes of ons of source rolling locati s 1, 2, and 3,	960 min in accord e as those defined of release are pos s of radioactivity ons. They are pr	lance with l previous sible. The and their esented in ocation for	n ODCM C ly. e release m release po ATTACH r implement	ease rate in uCi/sec f CONTROL 3.11.2.1 nodes identify the ints which are used IMENT C Table 2.2 ntation of ODCM GO's from
le v _e	ATTACH [2.2-4] be	IMENT F come:	Tables 2.2-4		for this lo		uations [2.2-3] and

.

ĩ

.

į٠

i

• • •

to a second s

Beaver Valley Power Station		Procedure Number: 1/2-ODC-2.02		
litke:		Unit:	Level Of Use:	
DOM. CASEC	OUS EFFLUENTS	1/2 Revisioa:	In-Field Reference Page Number:	
		1-	<u>39 of 128</u>	
8.2.1.7 ·	Determination of Controlling Location	· · · · · · · · · · · · · · · · · · ·	· ··· ·	
	The determination of controlling location for imp 3.11.2.1.a for noble gases is a function of the follo			
•	• Radionuclide mix and their isotopic release ra	te	. •	
	• Release Mode			
	• Meteorology	: · · · · ·		
	The incorporation of these 3 parameters into Equations for the controlling locations as press 2.2-8].			
l to fraction pro-	The radionuclide mix used to determine controlling	ng locations y	was based on source	
	terms calculated with the Stone and Webster Eng GAS1BB (similar to NUREG-0017. ^(3,1,3,4) Inputs the respective plants. The code inputs utilized are	incering Corp were based of	oration computer co on operating modes o	
	source term is presented in ATTACHMENT D T function of release type and Release Point.			
	The X/Q values utilized in the equations for impl 3.11.2.1.a are based upon the maximum long-terr unrestricted area. ATTACHMENT E Table 2.2-3	n annual aver presents the	age X/Q in the distances from the	
€ -50 C + •	Release Points to the nearest unrestricted area for the nearest vegetable garden, cow, goat, and beef 2.2-4 through 2.2-10 present the long-term annua Release Points to the special locations presented A description of their derivation is provided in 1/	animal. ATT 1 average (X/ in ATTACHN	ACHMENT F Table Q) values for all MENT E Table 2.2-3	
19. agres i suit suit suit attain a Constant suit suit suit suit attain agres suit suit suit attaine	For Release Modes 1, 2, and 3, dose calculations calculated site boundary X/Q values applicable to projected radionuclide mix applicable to the releas continuous elevated release could contribute to the selection of the two highest sector X/Q values at contribution. From these results, the distance and	the release p use source. In the dose at a gi the site bound	oints involved and the that a simultaneous ven location, the lary considered this	
	calculated site boundary dose were selected as the For Release Modes 1, 2, and 3 the controlling loc Mode 1, the dominant release is via VV-1 and C	e controlling cation is 0.35 V-2. In Relea	location. miles NW. In Relea use Modes 2 and 3, th	
	dominant release is a Containment Purge from th	e VV-1 or V	V-2.	
		•	-	

. . . .

:)

•••

\$

Constructions of the sec ÷ .

. . . - .

.

•••••

. • ••• ••

...

Beaver Valley Power Station	Procedure No	umber: 1/2-ODC-2.02
Title:	Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 40 of 128

For Release Mode 4, a similar evaluation was performed. Long-term annual average X/Q values were calculated at the mid-point of the 10 standard distances listed in ATTACHMENT F Table 2.2-4 through 2.2-10. In that a simultaneous, ground level release could contribute to the dose at a given location, the selection of the two highest X/Q values at the controlling distance considered this contribution. Since the two maximum X/Q values occurred in the 0.5 - 1.0 mile radial band, the controlling distance was selected at 0.75 miles. From the calculated dose results, the controlling sector was shown to be North. In this Release Mode, the dominant release is a Containment Purge via the PV-1/2 Gaseous Waste/Process Vent. Neither of the controlling receptor locations are presently inhabited.

Values for K_i, L_i, and M_i, which were used in the determination of the controlling receptor location and which are to be used in Equations [2.2-5] through [2.2-8] to show compliance with ODCM CONTROL 3.11.2.1.2, are presented in Table 2.2-11. Values taken from Table B-1 of NRC Regulatory Guide 1.109, Revision 1,^(3.1.3.5) were multiplied by 1E6 to convert picocuries to microcuries for use in ATTACHMENT G Table 2.2-11.

Values for V_i and B_i for the finite plume model can be expressed as shown in Equation [2.2-9] and [2.2-10]. Values were calculated using the NRC code RABFIN at the site boundary location which would receive the highest total dose from all Release Points. These values are presented in ATTACHMENT G Table 2.2-12 and calculated from the following equation:

$$B_{i} = \frac{K}{r_{d}} \sum_{j} \sum_{k} \sum_{l} \frac{f_{jk} A_{li} u_{a} E_{l} I}{u_{j}}$$
[2.2-9]

where:

. ;

I = The results of numerical integration over the plume spatial distribution of the airborne activity as defined by the meteorological condition of wind speed (u_j) and atmospheric stability class "k" for a particular wind direction.

K = A numerical constant representing unit conversions.

$$= \frac{(260 \text{ mrad})(\text{radians}) (\text{m}^3) (\text{transformation})}{(\text{sec})(\text{Mev})(\text{Ci})} \left[\frac{16 \text{ sectors}}{2\pi \text{ radians}} \right]$$

$$\left[1E - 6\frac{Ci}{uCi}\right] \left[3.15E7\frac{sec}{yr}\right]$$

= $2.1E4 \text{ mrad } (\text{m}^3) (\text{transformation})/\text{yr}(\text{Mev})(\text{uCi}).$

 r_d = The distance from the release point to the receptor location, meters:

4147 ·	Beaver V	Valley Power Station	Procedure No	imber: 1/2-ODC-2.02
Title:			Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GA	SEOUS EFF	LUENTS	Revision:	Page Number: 41 of 128
	uj =	The mean wind speed assigned to the "j" t	th wind speed	l class, meters/sec.
	f _{jk} =	The joint frequency of occurrence of the " stability class (dimensionless).	j" th wind sp	eed class and kth
	A _{li} =	The number of photons of energy corresp emitted per transformation of the "i" th ra		
:	E _l =	The energy assigned to the "l" th energy g	roup, Mev.	
· . ·· .	.u _a =	The energy absorption coefficient in air fo	or photon ene	rgy H _l , meters ⁻¹ .
	The V _i factor	is computed with conversion from air dose	to tissue de	oth dose, thus:
	$V_i = 1.1 \frac{K}{r_d} \sum_{j=1}^{N} \frac{1}{j}$	$\sum_{k=1}^{\infty} \frac{f_{jk}}{k} \frac{A_{li}}{u_{a}} \frac{u_{a}}{u_{j}} \frac{E_{l}}{e} \frac{I_{r}}{u_{T}} \frac{T_{d}}{d}$	•	[2.2-10]
·	where:	O	· .	· · · ·
	u _T =	The tissue energy absorption coefficient f	or photons of	f energy E _l , cm ² /gm.
•	T _d =	The tissue density thickness taken to represent (5gm/cm ²).	esent the tota	l body dose
	1.1 =	The ratio of the tissue to air absorption co photons of interest, mrem/mrad.	efficients ov	er the energy range
8.2.2	Dose Rate D	ue To Radioiodines And Particulates		:
in the second	radionuclides released in ga Based upon l	e in unrestricted areas resulting from the of s in particulate form (excluding C-14) with aseous effluents from the site shall be limit NUREG-0133, ^(3.1.3.1) the following basic ec CONTROL 3.11.2.1.b:	half lives group to 1,500 n	eater than 8 days nrem/yr to any organ
***		$\left Q_{is} + (\overline{X/Q})_{v} Q_{iv} \right \le 1,500 \text{ mrem/yr}$	· · · · ·	[2.2-11]
	where:			· · ·
• • • •	P _{it}	= Dose parameter for any organ τ for ea mrem/yr per uCi/m3.	ach identified	radionuclide "i",
	Qis	= The release rate of radionuclide "i", in releases, uCi/sec.	n gaseous eff	luents from elevated
	، ب		•	

÷

TitleUnitLevel OT UseODCM: GASEOUS EFFLUENTSInt Field ReferentQiv= The release rate of radionuclide "i", in gaseous effluents from ground level releases, uCi/sec. $(\overline{X/Q})_{*}$ = The release rate of radionuclide "i", in gaseous effluents from ground level releases, uCi/sec. $(\overline{X/Q})_{*}$ = The highest calculated annual average relative concentration at the unrestricted area boundary for elevated releases, sec/m ³ . $(\overline{X/Q})_{*}$ = The highest calculated annual average relative concentration at the unrestricted area boundary for ground level releases, sec/m ³ .NOTE:The dispersion parameters specified in Section 8.2.2 are limited to the site boundary as defined above.Releases may occur from any Release Point in the Release Modes listed in ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. $\sum_{i} P_{it} [(\overline{X/Q})_{pv} Q_{i}_{pv} + (\overline{X/Q})_{cv} Q_{i}_{cv^1} + (\overline{X/Q})_{vv} Q_{i}_{vv^1} + (\overline{X/Q})_{cv} Q_{i}_{cv^2} + (\overline{X/Q})_{vv^2} +$	····.	Beaver Va	lley Power Sta	tion	Procedure Nu	
ODCM: GASEOUS EFFLUENTSRevise: IThe probability of the probability of	Title:					Level Of Use:
$\begin{array}{rcl} 1 & -\frac{1}{42 \text{ of } 128} \\ \hline \\ Q_{iv} & = & \text{The release rate of radionuclide "i", in gaseous effluents from ground level releases, uCi/sec.} \\ \hline \\ $						In-Field Reference
level releases, uCi/sec. $(\overline{XIQ})_{t} = \text{The highest calculated annual average relative concentration at the unrestricted area boundary for elevated releases, sec/m3. (\overline{XIQ})_{v} = \text{The highest calculated annual average relative concentration at the unrestricted area boundary for ground level releases, sec/m3. NOTE: The dispersion parameters specified in Section 8.2.2 are limited to the site boundary as defined above. Releases may occur from any Release Point in the Release Modes listed in ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. \sum_{i} P_{ix} (\overline{(X/Q)})_{pv} Q_{i}_{pv} + (\overline{(X/Q)})_{cv} Q_{i}_{cv^{1}} + (\overline{(X/Q)})_{vv} Q_{i}_{vv^{1}} + (\overline{(X/Q)})_{cv} Q_{i}_{cv^{2}} + (\overline{(X/Q)})_{vv} Q_{i}_{vv^{2}} = (\overline{(X/Q)})_{vv} Q_{i}_{vv^{2}} = (\overline{(X/Q)})_{vv} Q_{i}_{cv^{2}} + (\overline{(X/Q)})_{vv} Q_{i}_{dv^{2}} + (\overline{(X/Q)})_{wv} Q_{i}_{wv^{2}} = 1500 \text{ m} (\overline{(X/Q)})_{tv} Q_{i}_{tv^{2}} + (\overline{(X/Q)})_{cb} Q_{i}_{cb^{2}} + (\overline{(X/Q)})_{dv} Q_{i}_{dv^{2}} + (\overline{(X/Q)})_{wv} Q_{i}_{wv^{2}} = 1500 \text{ m} (\overline{(X/Q)})_{rv} = \text{Highest calculated annual average relative concentration for releases from PV-1/2, sec/m3. (\overline{(X/Q)})_{rv} = \text{Highest calculated annual average relative concentration for releases from VV-1 and CV-2, sec/m3. (\overline{(X/Q)})_{rv} = \text{Highest calculated annual average relative concentration for releases from TV-2, sec/m3. (\overline{(X/Q)})_{rv} = \text{Highest calculated annual average relative concentration for releases from TV-2, sec/m3.}$	ODCM: C	ASEOUS EFFLU	ENIS	······································	1	-
unrestricted area boundary for elevated releases, sec/m ³ . $(\overline{X/Q})_{v} = \text{The highest calculated annual average relative concentration at the unrestricted area boundary for ground level releases, sec/m3. NOTE: The dispersion parameters specified in Section 8.2.2 are limited to the site boundary as defined above. Releases may occur from any Release Point in the Release Modes listed in ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. \sum_{i} P_{i\tau} t(\overline{X/Q})_{pv} Q_{i}_{pv} + (\overline{X/Q})_{cv} Q_{i}_{cv'} + (\overline{X/Q})_{vv} Q_{i}_{vv'} + (\overline{X/Q})_{cv} Q_{i}_{cv'^2} + (\overline{X/Q})_{vv'} (\overline{X/Q})_{tv} Q_{i}_{tv'^2} + (\overline{X/Q})_{cb} Q_{i}_{cb'^2} + (\overline{X/Q})_{dv} Q_{i}_{dv'^2} + (\overline{X/Q})_{wv} Q_{i}_{wv'^2}] \le 1500 \text{ m} (\overline{X/Q})_{tv} Q_{i}_{tv'^2} + (\overline{X/Q})_{cb} Q_{i}_{cb'^2} + (\overline{X/Q})_{dv} Q_{i}_{dv'^2} + (\overline{X/Q})_{wv} Q_{i}_{wv'^2}] \le 1500 \text{ m} (\overline{X/Q})_{rv} = \text{Highest calculated annual average relative concentration for releases from PV-1/2, sec/m3. (\overline{X/Q})_{rv} = \text{Highest calculated annual average relative concentration for releases from CV-1 and CV-2, sec/m3. (\overline{X/Q})_{rv} = \text{Highest calculated annual average relative concentration for releases from TV-1 and VV-2, sec/m3. (\overline{X/Q})_{rv} = Highest calculated annual average relative concentration for releases from TV-1 and VV-2, sec/m3.$		Q _{iv} =			n gaseous effl	uents from ground
unrestricted area boundary for ground level releases, sec/m ³ . NOTE: The dispersion parameters specified in Section 8.2.2 are limited to the site boundary as defined above. Releases may occur from any Release Point in the Release Modes listed in ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. $\sum_{i} P_{i\tau} [(\overline{X/Q})_{pv} Q_{i}_{pv} + (\overline{X/Q})_{cv} Q_{i}_{cv^{1}} + (\overline{X/Q})_{vv} Q_{i}_{vv^{1}} + (\overline{X/Q})_{cv} Q_{i}_{cv^{2}} + (\overline{X/Q})_{cv^{2}} + (\overline{X/Q})_{tv} Q_{i}_{vv^{2}} + (\overline{X/Q})_{cv^{2}} + (\overline{X/Q})_{cv^{2}} + (\overline{X/Q})_{uv^{2}} + (\overline{X/Q})_{uv^{2}} Q_{i}_{vv^{2}} + (\overline{X/Q})_{uv^{2}}] \le 1500 \text{ m}$ $(\overline{X/Q})_{tv} Q_{i}_{tv^{2}} + (\overline{X/Q})_{cb} Q_{i}_{cb^{2}} + (\overline{X/Q})_{dv} Q_{i}_{dv^{2}} + (\overline{X/Q})_{wv} Q_{i}_{wv^{2}}] \le 1500 \text{ m}$ $(\overline{X/Q})_{rv} = \text{Highest calculated annual average relative concentration for releases from PV-1/2, sec/m3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from VV-1 and CV-2, sec/m3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from TV-2, sec/m3.}$		$(\overline{X/Q})_s =$	-			
site boundary as defined above. Releases may occur from any Release Point in the Release Modes listed in ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. $\sum P_{ir} [(\overline{X/Q})_{pv} Q_{i}_{pv} + (\overline{X/Q})_{cv} Q_{i}_{cv^{1}} + (\overline{X/Q})_{vv} Q_{i}_{vv^{1}} + (\overline{X/Q})_{cv} Q_{i}_{cv^{2}} + (\overline{X/Q})_{vv^{1}} + (\overline{X/Q})_{vv} Q_{i}_{vv^{1}} + (\overline{X/Q})_{cv} Q_{i}_{cv^{2}} + (\overline{X/Q})_{vv^{2}} + (\overline{X/Q})_{vv^{2}} + (\overline{X/Q})_{vv^{2}} + (\overline{X/Q})_{vv^{2}} + (\overline{X/Q})_{vv^{2}} \le 1500 \text{ m}$ $(\overline{X/Q})_{tv} Q_{i}_{tv^{2}} + (\overline{X/Q})_{cb} Q_{i}_{cb^{2}} + (\overline{X/Q})_{dv} Q_{i}_{dv^{2}} + (\overline{X/Q})_{wv} Q_{i}_{wv^{2}} \le 1500 \text{ m}$ $[2.2-12]$ where: $(\overline{X/Q})_{pv} = \text{Highest calculated annual average relative concentration for releases}$ from PV-1/2, sec/m ³ . $(\overline{X/Q})_{cv} = \text{Highest calculated annual average relative concentration for releases}$ from CV-1 and CV-2, sec/m ³ . $(\overline{X/Q})_{w} = \text{Highest calculated annual average relative concentration for releases}$ from TV-1.1 and VV-2, sec/m ³ . $(\overline{X/Q})_{w} = \text{Highest calculated annual average relative concentration for releases}$ from TV-2, sec/m ³ . $(\overline{X/Q})_{eb} = \text{Highest calculated annual average relative concentration for releases}$		(<u>X/Q</u>), =		-	F	_
ATTACHMENT C Table 2.2-1. To show compliance with ODCM CONTROL 3.11.2. Equation [2.2-11] is now expressed in terms of the actual Release Points for the site. $\sum_{i} P_{i\tau} [(\overline{X/Q})_{pv} Q_{i}_{pv} + (\overline{X/Q})_{cv} Q_{i}_{cv^{1}} + (\overline{X/Q})_{vv} Q_{i}_{vv^{1}} + (\overline{X/Q})_{cv} Q_{i}_{cv^{2}} + (\overline{X/Q})_{cv^{2}} + (\overline{X/Q})_{tv^{2}} + (\overline{X/Q})_{cv^{2}} + (\overline{X/Q})_{tv^{2}} + (\overline{X/Q})_{$	·	NOTE:		-	in Section 8.2.	2 are limited to the
$(\overline{X/Q})_{tv} Q_{i_{tv^2}} + (\overline{X/Q})_{cb} Q_{i_{cb^2}} + (\overline{X/Q})_{dv} Q_{i_{dv^2}} + (\overline{X/Q})_{wv} Q_{i_{wv^2}}] \leq 1500 \text{ m}$ $[2.2-12]$ where: $(\overline{X/Q})_{pv} = \text{Highest calculated annual average relative concentration for releases from PV-1/2, sec/m^3.}$ $(\overline{X/Q})_{cv} = \text{Highest calculated annual average relative concentration for releases from CV-1 and CV-2, sec/m^3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m^3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m^3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from TV-2, sec/m^3.}$ $(\overline{X/Q})_{vv} = \text{Highest calculated annual average relative concentration for releases from TV-2, sec/m^3.}$		ATTACHMEN	T C Table 2.2-1. To s	how compliance	with ODCM (CONTROL 3.11.2.1.
 [2.2-12] where: (X/Q)_{pv} = Highest calculated annual average relative concentration for releases from PV-1/2, sec/m³. (X/Q)_{cv} = Highest calculated annual average relative concentration for releases from CV-1 and CV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. 		$\sum_{i} P_{i\tau} \left[(\overline{X/Q})_{pv} \right]$	$Q_{i_{pv}} + (\overline{X/Q})_{cv} Q_{i}$	$+(\overline{X/Q})_{VV}$	$Q_{i_{vv^1}} + (\overline{X/Q})$	$(i)_{cv} Q_{i_{cv^2}} + (\overline{X/Q})$
 where: (X/Q)_{pv} = Highest calculated annual average relative concentration for releases from PV-1/2, sec/m³. (X/Q)_{cv} = Highest calculated annual average relative concentration for releases from CV-1 and CV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. (X/Q)_{tv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. 		$(\overline{X/Q})_{tv} Q_{i_{tv}^2}$	+ $(\overline{X/Q})_{cb} Q_{i_{cb^2}}$ +	(X/Q) _{dv} Q _i dv²	+(X/Q) _{wv} ($Q_{i_{WV^2}}] \le 1500 \mathrm{mrg}$
 (X/Q)_{pv} = Highest calculated annual average relative concentration for releases from PV-1/2, sec/m³. (X/Q)_{cv} = Highest calculated annual average relative concentration for releases from CV-1 and CV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. (X/Q)_{tv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. 		• where:				[2.2-12]
 from CV-1 and CV-2, sec/m³. (X/Q)_{vv} = Highest calculated annual average relative concentration for releases from VV-1 and VV-2, sec/m³. (X/Q)_{tv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. (X/Q)_{cb} = Highest calculated annual average relative concentration for releases 				_	elative concent	ration for releases
 from VV-1 and VV-2, sec/m³. (X/Q)_{tv} = Highest calculated annual average relative concentration for releases from TV-2, sec/m³. (X/Q)_{cb} = Highest calculated annual average relative concentration for releases 	to	(X/Q) _{cv} :	-	- ·	elative concent	ration for releases
from TV-2, sec/m ³ . $(\overline{X/Q})_{cb}$ = Highest calculated annual average relative concentration for releases		(X/Q) _{vv} :	-	-	elative concent	ration for releases
		(X/Q) _{tv}	-		elative concent	ration for releases
		$(\overline{X/Q})_{cb}$	_		elative concent	ration for releases

LI_

Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-2.02
Title: ODCM: GASEOUS EFFLUENTS	Unit: <u>1/2</u> Revision:	Level Of Use: In-Field Reference Page Number:
$(\overline{X/Q})_{dv}$ = Highest calculated annual average r from DV-2, sec/m ³ .	• . •. •	
(X/Q) _{wv} = Highest calculated annual average r WV-2, sec/m ³ .	elative concent	ration for release from
$Q_i = Long$ -term release rate of radionuclipy	ide "i" from PV	-1/2, uCi/sec.
Q _i = Long-term release rate of radionucl	ide "i" from CV	-1, uCi/sec.
$Q_{i_{cv2}}$ = Long-term release rate of radionucl	ide "i" from CV	7-2, uCi/sec.
Q_{ivv1} = Long-term release rate of radionucl	ide "i" from VV	7-1, uCi/sec.
$Q_{i_{vv2}} = Long$ -term release rate of radionucl	ide "i" from VV	7-2, uCi/sec.
Q_{i} = Long-term release rate of radionucl tv2	ide "i" from TV	/-2, uCi/sec.
$Q_{i_{cb2}} = Long$ -term release rate of radionucl	ide "i" from CE	3-2, uCi/sec.
$Q_i = \text{Long-term release rate of radionucl}$	ide "i" from DV	/-2, uCi/sec.
Q_{iwv2} = Long-term release rate of radionucl		V-2, uCi/sec.
All other terms are the same as those defined previou	sly.	•
 TV-2, CB-2, DV-2 and WV-2 are not normal radioactive release Points are included only for use if radioactive release future. In the calculation to show compliance with O inhalation pathway is considered. Values of the organ dose parameters, P_{it}, were calcul NUREG-0133.^(3.1.3.1) For the child age group, the fo nuclides. The P_{it}, values are presented in ATTACHN 	s via these vent DCM CONTR ated using meth llowing equation	s are identified in the OL 3.11.2.1.b only th odology given in on was used for all
$\mathbf{P} = 3.70 \pm 0.000 \text{ DEA}$		- [2 2_13]

ر د بارم مدیر د از سیود افزه ایم میرد. از دارد

 $P_{i\tau} = 3.79E9 \text{ DFA}_{i\tau}$

• • • •

. ``\

i . .

.

[2.2-13]

а .:

Re	aver Valley Power Station	Procedure Nu	
		Unit	1/2-ODC-2.02
Title:			Level Of Use: In-Field Reference
ODCM. GASEO	US EFFLUENTS	Revision:	Page Number:
		1	44 of 128
when 3.7	re: E9 = Breathing rate of child (3,700 m ³ /yr) x unit	conversion fa	ctor (1E6 pCi/uCi).
DF	$A_{i\tau}$ = The organ inhalation dose factor for a child 0172, ^(3.1.3.6) for organ τ , nuclide "i", in units		
For NW	Release Modes 1 through 4, the controlling location	is the site bo	undary, 0.35 miles
Equ	ation [2.2-12] becomes:		
	i_{t} [7.00E - 10 Q + 9.24E - 5 Q + 1.03E - 4 pv cv1 cv1	Q _i vv1 +7.3	5E-5Q _i + tv1
9.2	$4E - 5Q_{i_{cv2}} + 1.03E - 4Q_{i_{vv2}} + 7.35E - 5Q_{i_{tv}}$	+7.35E-5 2	Q _i +9.24E -
5 Q	$i + 9.24E - 5Q_i \ge 1500 \text{ mrem/yr}$ dv2 $wv2$		[2.2-14]
8.2.2.1	Determination of Controlling Location		
•	The determination of the controlling location for CONTROL 3.11.2.1.b for radioiodines and partic parameters as for noble gases plus a fourth, the ac incorporation of these parameters into Equation [equations for each Release Mode at the site bound radionuclide mix was again based upon the sourc ATTACHMENT D Tables 2.2-2a and 2.2-2b as a Release Point.	ulates is a fun tual receptor 2.2-12] result dary controllin e terms presen	action of the same 3 pathways. The s in the respective ng locations. The nted in
- + - -	In the determination of the controlling site bound highest 2 site boundary X/Q values for each Rele conjunction with the radionuclide mix and the rel determine the controlling location.	ase Point were	e utilized in
	The Pit values are presented in ATTACHMENT	H Table 2.2-1	3.
•	The X/Q values in Equation [2.2-14] were obtain 2.2-4 through 2.2-10.	ed from ATT	ACHMENT F Tables

i,

•

.....

. -

· ··· E	Beaver Valley Power Station	Procedure Nu	
Title:		···· Unit:	1/2-ODC-2.02 Level Of Use:
		1/2	In-Field Reference
ODCM: GAS	EOUS EFFLUENTS	Revision:	Page Number: 45 of 128
8.3 <u>Comp</u> (Gase	liance With 10 CFR 50 Dose Limits (ODCM C ous)	ONTROLS 3.11.	<u>2.2 And 3.11.2.3)</u>
radwa Releas	Beaver Valley site all elevated gaseous releases a ste system. The effluent from both units are mixe se Point, the PV-1/2 Gaseous Waste/Process Vent,	d and discharged , at the top of the	from a common Unit 1 Cooling Towe
to each resulti expect	esulting dose for the purpose of implementing 10 C h unit. The only exception would be a Containme ing dose shall be attributed to the contributing reac ted to be rare, equations are shown throughout this	nt Purge via the P ctor unit. Since th	rocess Vent. The is operation is
0.5.			
8.3.1 <u>D</u>	ose Due To Noble Gases		
8.3.1.1	Cumulation Of Doses	2 ' C 4 5 '	
8.3.1	air dose is limited to 10 millirad and the beta addition, ODCM CONTROL 3.11.2.4 require when averaged over 31 days exceed 0.2 mrad Based upon NUREG-0133, ^(3.1.3.1) the air dose noble gases released in gaseous effluents are 1.1.1 <u>Gamma Radiation Quarter Limit</u>	es use of radwaste I for gamma and 0 e limits in the unre	system if air doses .4 mrad for beta. stricted area due to
3	$3.17E - 8\sum_{i} \left[M_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv} \right] + \left[B_{i} Q_{iv} \right] $	$\left\ \mathbf{x}_{is} + \mathbf{b}_{i} \mathbf{q}_{is} \right\ \le 5$	mrad [2.3-1]
8.3.	1.1.2 <u>Beta Radiation Quarter Limit</u>		· · ·
3 	$8.17E - 8\sum_{i} N_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/Q})_{v} Q_{iv$	$\overline{(t)}_{s} Q_{is} + (\overline{X/q})_{s} q$	$\left s \right \le 10 \text{ mrad} \left[2.3 - 2 \right]$
<i>+-</i> 8.3.	1.1.3 Gamma Radiation Year Limit	· · · · · · · ·	
1	$3.17E - 8 \sum_{i} [M_{i}[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv}] + [B_{i}Q_{v}]$	$[b_{is} + b_i q_{is}]] \le 10$	mrad .
8.3.	1.1.4 Beta Radiation Year Limit		· · · ·
	for the factor of the second	\overline{Q}) Q; + $(\overline{X/q})$	
3	$3.17E - 8\sum_{i} N_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv} + (\overline{X/q})_{v} q_{iv} \right]$	5 15 5	
2 	$3.17E - 8\sum_{i} N_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv} + (\overline{X/q})_{iv} \right]$	5 15 5	$[1;s] \le 20 \text{ mrad}$ [2.3-4]

-

·ŧ

	Beave	r-N	Valley Power Station	Procedure N	
Title:				Unit:	1/2-ODC-2.02 Level Of Use:
	• • •		•	1/2	In-Field Reference
ODCM: GA	SEOUS E	FF	LUENTS	Revision: 1	Page Number: 46 of 128
8.3	.1.1.5	G	amma Radiation Projection Average	d Over 31 Day	
	3.17E - 8	Σ	$M_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv} \right] + \left[B_{i} Q_{is} \right]$	$+b_iq_{is} \le 0$.2 mrad [2.3-5]
8.3	.1.1.6	<u>B</u>	eta Radiation Projection Averaged O	<u>ver 31 Days</u>	
	3.17E – 8	Σ i	$N_{i} \left[(\overline{X/Q})_{v} Q_{iv} + (\overline{X/q})_{v} q_{iv} + (\overline{X/Q})_{s} \right]$	$_{3}Q_{is} + (\overline{X/q})_{s}$	$q_i s \le 0.4 mrad [2.3-6]$
	where:				•
	Mi	11	The air dose factor due to gamma emis radionuclide "i" (mrad/yr per uCi/m ³).	sions for each i	identified noble gas
	Ni	=	The air dose factor due to beta emission radionuclide "i" (mrad/yr per uCi/m ³).	ns for each ider	ntified noble gas
	(X/Q),	. =	The annual average relative concentration unrestricted area boundary for long-term hrs/year (sec/m ³).		-
•	(X/q) _v	=	The relative concentration for areas at 6 boundary for short-term vent releases e (sec/m ³).	•	
i	,(X/Q),	=	The annual average relative concentrat unrestricted area boundary for long-ter than 500 hrs/year (sec/m ³).		
to	(X/q),	=	The relative concentration for areas at boundary for short-term free standing shrs/year (sec/m ³).	-	
	q is	=	Release of noble gas radionuclide "i" is stack releases equal to or less than 500	-	
	q _{iv}	=	Release of noble gas radionuclide "i" i releases equal to or less than 500 hrs/y	-	ents for short-term ver
	Qis	Ξ	Release of noble gas radionuclide "i" i standing stack releases greater than 50		
	Qiv	=	Release of noble gas radionuclide "i" i	n gaseous efflu	ents for long-term ven

L**1**...

Title: ODCM: GASEOU	ver Valley Power Station	•	Procedure Nu	Inder: 1/2-ODC-2.02
ODCM: GASEOU	· · · · ·	:	Unit: 1/2	Level Of Use: In-Field Reference
•	JS EFFLUENTS	•	Revision:	Page Number: 47 of 128
B _i b _i	 The constant for long-term release identified noble gas radionuclide from the elevated finite plume (mean statement of the constant for short-term release) 	"i" accounti trad/yr per u	ing for the iCi/sec).	gamma radiation
*	each identified noble gas radionu radiation from the elevated finite	clide "i" acc	counting fo	or the gamma
3:17	E-8 = The inverse of the number of sec	onds in a ye	ar.	· · · .
meteo suffic dispe [2.3-0	EG 0133 ^(3.1.3.1) permits eliminating the sho prological terms in the determination of do ciently random in both time of day and dur rsion conditions. This special consideration [5], however, a summary of the "real time" sponding releases shall be included in the rt.	oses when sl ation to be r on is applied meteorolog	hort-term i represente d in Equati ical data c	releases are d by annual average ions [2.3-1] through oupled with the
with Repo The i	ncorporation of this option and the Releas	the Annual e Modes of	Radiologi ATTACH	cal Environmental MENT I Table 2.3-
•	ts in the following equations to show comp er or year.		UUCIK.	of the calendar
8.3.1.1.7	Gamma Radiation Dose Equation	<u>n</u>		;
3.171	$E - 8 \sum_{i} [M_{i} [(\overline{X/Q})_{cv} Q_{i} + (\overline{X/Q})_{vv} Q_{i}]$	+ (X/Q)	_{cb} Q _i +	(X/Q) _{dv} Q _{idv} +
	·	• •	•	[2.3-7]
•	$(\overline{X/Q})_{WV}Q_{i_{WV}}]+0.5B_{i}Q_{i_{PV}}]$			
≤	_0.2 mrad (per 31 days), or the second secon			
<u><</u>	wv pv _0.2 mrad (per 31 days), or		:	
<u><</u>	_0.2 mrad (per 31 days), or the second secon	er 1		

ļ

.

......

• • •

•

)

Ę

.

Becaver Valley Power StationProcedure Number:ToticUnitUnitLevel of UnitLevel of UnitStation Dose Equation3.17E - 8
$$\sum_{i=1}^{N} i (\overline{XIQ})_{ev} Q_{i_{ev}} + (\overline{XIQ})_{vv} Q_{i_{ev}} + (\overline{XIQ})_{cb} Q_{i_{eb}} + (\overline{XIQ})_{dv} Q_{i_{ev}} + (\overline{XIQ})_{dw} Q_{i$$

. . ..

•

. .

:

•

:

ł,

.

•

1

Beaver Valley Power Station	Procedure Nu	• • • • •
Title:	Unit:	1/2-ODC-2.02
	1/2	In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number:
	<u> </u>	49 of 128
For Release Modes 1, 2, 3, and 4 the controlling location of the appropriate X/Q values into Equations [2.3-7] and		
8.3.1.1.9 <u>Gamma Radiation Dose Determination</u>	•	
$3.17E - 8 \sum_{i} [M_{i}] [9.24E - 5 Q_{i}]_{cv} + 1.03E - 4 Q_{i}]_{vv} + 7.35$	$5E-5Q_{i_{tv}}$	$+7.35E-5Q_{i_{cb}}$ +
024F-50 +024F-50 '1+05B 0		[2.3-9]
$9.24E - 5Q_i + 9.24E - 5Q_i] + 0.5B_iQ_i$	i	[2.]-9]
and a second	рv	.
	?	
\leq 0.2 mrad (per 31 days), or \leq 5.0 mrad (per quarter), or		
		•
\leq 10.0 mrad (per year)		
8.3.1.1.10 Beta Radiation Dose Determination	· · ·	
6.5.1.1.10 <u>Deta Kaulation Dose Determination</u>	• •	
$3.17E - 8 \Sigma N_{1}[9.24E - 5 Q_{1} + 1.03E - 4 Q_{1} + 7.35E$	3-50 +	735E - 50 +
$3.17E = 0 \angle 13.17E = 0 \angle 13.1$		
	LV LV	CO
$9.24E - 5Q_1 + 9.24E - 5Q_1 + (0.5)$	70E - 10C	.] [2.3-10]
	7.0L 10 Q	
uversite and the second s		p•
≤ 0.4 mrad (per 31 days), or		
\leq 10.0 mrad (per quarter), or		
\leq 20.0 mrad (per year)		
		:
8.3.1.1.11 Determination of Controlling Location		•.
The determination of the controlling location 50 is a function of the following parameters:	s for impler	nentation of 10 CFR
a family the control of the state of detailed the state of the state		۰. ۱
• Radionuclide mix and their isotopic relea	ise	
	·	:
Release Mode	•	· ·
Meteorology		
The incorporation of these parameters into E resulted in the equations for the controlling l	-	
[2.3-9] and [2.3-10]. The radionuclide mix v		
calculated using the NRC GALE Code (see 1		
shown in ATTACHMENT D Tables 2.2-2a	and 2.2-2b a	s a function of relea
type and Release Point.		
		-
1 · · · · · · · · · · · · · · · · · · ·	•	,
		•

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02
Title:	Unit: Level Of Use: 1/2 In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision: Page Number: 1 50 of 128

As in Section 8.2.1, for each Release Mode, the two highest boundary X/Q values for each release point and release duration were utilized in conjunction with the radionuclide mix and release for each release point to determine the controlling site boundary location. Since elevated releases occur from the BVPS site and their maximum X/Q values may not decrease with distance (i.e., the site boundary may not have highest X/Q values), the two highest X/Q values for those distances, greater than the site boundary, were also considered in conjunction with the radionuclide mix to determine the controlling location. These values of X/Q were obtained for the midpoint of the 10 standard distance intervals previously presented in ATTACHMENT F Tables 2.2-4 through 2.2-10.

11

For each Release Mode, a particular combination of Release Point mix and meteorology dominates in the determination of the controlling location. For Release Modes 1, 2, 3, and 4 the controlling release is VV-1 and VV-2. For Release Mode 3, the controlling release is CV-1 and CV-2.

Values for M_i and N_i , which were used in the determination of the controlling location and which are to be used by BV-1 and BV-2 in Equations [2.3-9] and [2.3-10] to show compliance with 10 CFR 50 were presented in ATTACHMENT G Table 2.2-11. Values taken from Table B-1 of Regulatory Guide 1.109, Revision $1^{(3.1.3.5)}$ were multiplied by 1E6 to convert from picocuries to microcuries for use in ATTACHMENT G Table 2.2-11.

In determination of the controlling location for Release Modes 1, 2, 3, and 4, ATTACHMENT F Tables 2.2-4 through 2.2-7 are utilized for X/Q values. The B_i values to be utilized are the same values which were presented in ATTACHMENT G Table 2.2-12. A description of the derivation of the various X/Q values is presented in 1/2-ODC-3.01.

The following relationship must hold for BV-1 or BV-2 to show compliance with ODCM CONTROL 3.11.2.2:

For The Calendar Ouarter

	•
$D_{\gamma} \leq 5.0 \text{ mrad}$	[2.3-11]
$D_{\beta} \leq 10 \text{ mrad}$	[2.3-12]
<u>For The Calendar Year</u>	
$D_{\gamma} \leq 10 \text{ mrad}$	[2.3-13]
$D_{\beta} \leq 20 \text{ mrad}$	[2.3-14]

Beaver Valley Power Station Title: ODCM: GASEOUS EFFLUENTS	Unit: 1/2	/2-ODC-2.02 Level Of Use:
ODCM: GASEOUS EFFLUENTS		In-Field Reference
	Revision:	Page Number: 51 of 128
where:		
D_{γ} = The air dose from gamma radi	ation (mrad).	
D_{β} = The air dose from beta radiation	on (mrad).	
The quarterly limits given above represent of of Section II.B.1 of Appendix I of 10 CFR 5 [2.3-11] through [2.3-14] are exceeded, a sp Section IV.A of Appendix I of 10 CFR 50 a must be filed with the NRC at the identified	50. If any of the second secon	ne limits of Equation ursuant to both
In addition, ODCM CONTROL 3.1.2.4 requestions of the following:	naterials in the	at waste when
$D_{\gamma} \leq 0.2 \text{ mrad}$. <u>.</u>	[2.3-15]
$D_{\beta} \leq 0.4 \text{ mrad}$		[2.3-16]
8.3.1.2 Projection Of Doses (Noble Gas) Doses due to gaseous releases from BV-1 and BV per 31 days in accordance with ODCM CONTRO see Section 8.3.2.2 Projection Of Doses for additi Radwaste Treatment System and the Ventilation I used to reduce radioactive materials in gaseous w accordance with ODCM CONTROL 3.11.2.4 wh dose due to gaseous effluent releases from each re days, would exceed 0.2 mrad for gamma radiation (Also see Section 8.3.2.2 Projection Of Doses for doses used in the 31-day dose projection will be c and [2.3-10] as appropriate. The 31-day dose pro according to the following equations:	DL 4.11.2.4 an ional specifica Exhaust Treat raste prior to the en the projecte eactor unit, when and 0.4 mrace additional specalculated usir	d this section. (Also tions). The Gaseous ment System shall b neir discharge in ed gaseous effluent a nen averaged over 3 l for beta radiation. ecifications). The ng Equations [2.3-9]
8.3.1.2.1 <u>When Including Pre-Release Data</u> ,	, · · ·	

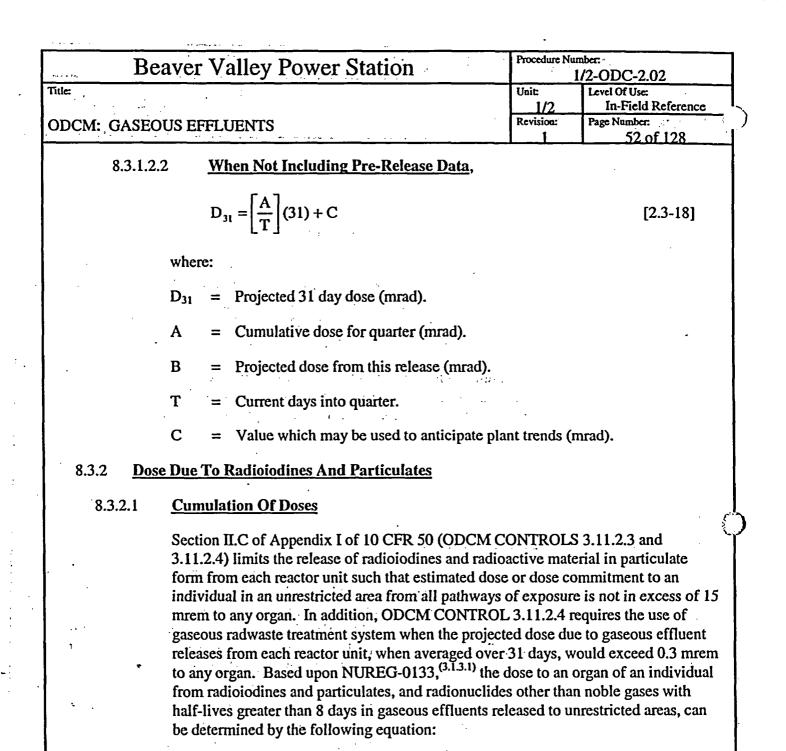
م و مدین اور ا

......

· .

• ****

•-



8.3.2.1.1

Radioiodines and Particulates Month, Quarter, and Year Limits

 $3.17E - 8 \sum_{i} R_{i\tau} [W_{s}Q_{is} + W_{s}q_{is} + W_{v}Q_{iv} + W_{v}q_{iv}]$

 ≤ 0.3 mrem (per 31 days), or

[2.3-19]

- \leq 7.5 mrem (per quarter), or
- ≤ 15.0 mrem (per calendar year)

Beaver V	Beaver Valley Power Station		ver Station	Procedure Number: 1/2-ODC-2.02		
Title:				Unit:	Level Of Use:	
ODCM: GASEOUS EFFL	TICATO			1/2 Revision:	In-Field Referen	
ODCM: GASEOUS EFFL	UENIS	_	· · · · · · · · · · · · · · · · · · ·	1	53 of 128	
W	here:			•	· · · · · · · · · · · · · · · · · · ·	
an an an an Araba. An an	Qis	, = .	Release of radionuclide "i" for releases greater than 500 hrs/	-	n free standing sta	
ta ta ta ta ta ta ta	Qiv	=	Release of radionuclide "i" fo than 500 hrs/yr (uCi).	or long-tern	n vent releases gre	
	q is	=	Release of radionuclide "i" for releases equal to or less than			
	q iv	. = ,	Release of radionuclide "i" fo to or less than 500 hrs/yr (uC		m vent releases eq	
· · · · · · · · · · · · · · · · · · ·	Ws		Dispersion parameter for est the controlling location for lo releases greater than 500 hrs.	ong-term fr		
		-	sec/m ³ for the inhalation path	nway, (W/ (2)s.	
• •		=	meters ⁻² for the food and gro	und plane I	bathway, $(\overline{D/Q})$ s.	
•	W _v	11	The dispersion parameter for individual at the controlling releases greater than 500 hrs	location for		
		=	sec/m ³ for the inhalation pat	hway, $(\overline{X}/\zeta$	į) _v .	
na na ser	•	=	meters ⁻² for the food and gro	ound plane	pathway, $(\overline{D/Q})_v$.	
	Ws	· =	Dispersion parameter for est at the controlling location fo to or less than 500 hrs/yr.	imating the	dose to an individ	
1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	t tra stration) =	sec/m^3 for the inhalation pat	hway, (W/	q) _s .	
	• • • • • •	=	meters ⁻² for the food and gro	ound plane	pathway, $(\overline{D/q})_s$.	
n in state and a	Wv.		individual at the controlling	r estimating location fo 1 500 hrs/vr	g the dose to an r short-term vent	
la de la constante de la consta La constante de la constante de	· · · · · · · · ·	· ; =	releases equal to or less than sec/m^3 for the inhalation particular sectors sec/m^3 for the inhalation particular sector	thway, (\overline{X}/c)	-])v.	
· · · · · · · · · · · · · · · · · · ·	: · ·		meters ⁻² for the food and gro		<u> </u>	

•

:

1

s' ~

Beave	r Valley P	ower Station	Procedure N	
Title:			Unit:	1/2-ODC-2.02 Level Of Use;
	· , ·		1/2	In-Field Reference
ODCM: GASEOUS E	EFFLUENTS		Revision:	Page Number:
·	· · · · ·	•		54 of 128
	3.17E-8	= The inverse of the nu	mber of seconds in	n a year.
	R _{ir}	= The dose factor for e organ " τ " of interest per uCi/m ³).		onuclide "i" for the sec per m ⁻² or mrem/yr
	2 Release Po 2.3-1. As de use of long-tu modes of Tal with ODCM	es and particulates may be ints in the Release Modes scribed previously in Sec erm annual average dispe ble 2.3-1 results in the fol CONTROLS 3.11.2.3 an 3-19] becomes:	s identified in ATT tion 8.3.1.1, NURE rsion calculations (lowing equations)	ACHMENT I Table EG 0133 ^(3.1.3.1) permits (which with the release to show compliance
8.3.2.1.2	<u>Radioiodine</u>	es and Particulates Dose	Equation	
· 3.17E-8	SΣR _{iτ} [0.5 W ₁	$P_{pv}Q_{i_{pv}} + W_{cv}Q_{i_{cv}} + W_{cv}Q_{i_{cv}}$	$V_{vv}Q_{i_{vv}} + W_{tv}Q_{i_{vv}}$	$+ W_{cb}Q_{i_{cb}} +$
	W _{dv} Q _i	+ W _{wv} Q _i]		[2.3-20]
•	\leq 7.5 mrem	(per 31 days), or (per quarter), or (per calendar year)		
	where:			
•	0.5 W _{pv}		ortion of dose assig	PV-1/2. The value of ned to each Unit due to
	W _{cv}	= Dispersion parameter	er for releases from	CV-1 and CV-2.
* # ₁	W _{vv}	= Dispersion parameter	er for releases from	VV-1 and VV-2.
	W _{tv}	= Dispersion parameter	er for releases from	TV-2.
	W _{cb}	= Dispersion parameter	er for releases from	CB-2.
	W _{dv}	= Dispersion parameter	er for releases from	DV-2.
	W _{wv}	= Dispersion parameter	er for releases from	1 WV-2.
l	Q	= Release of radionuc		

Beaver Va	Illey Power Station	Procedure Na	umber: 1/2-ODC-2.02
Title:		Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASEOUS EFFLU	ENTS	Revision: 1	Page Number: 55 of 128
	$Q_{i_{cv}} = Release of radionuclide "i"$	from CV-1 a	and CV-2 (uCi).
e e e e e e e e e e e e e e e e e e e	Q _i = Release of radionuclide "i"	from VV-1	and VV-2 (uCi).
	Q_i = Release of radionuclide "i"	from TV-2 ((uCi).
	Q _i = Release of radionuclide "i"	from CB-2 ((uCi).
en e	$Q_{i_{dv}} = Release of radionuclide "i"$	from DV-2	(uCi).
	Q _i = Release of radionuclide "i"	from WV-2	(uCi).
futu In d fun of I Ince	ese are included only for use if a radioact are. Altermining the dose at a particular locati action of the pathway. For the food and g D/Q. If the inhalation pathway is consider proportion of the various pathways into H owing equation for a particular organ:	on, dispersio round plane red, W is in Equation [2.3	on parameter W is a pathway, W is in ter terms of X/Q.
8.3.2.1.2.1	Radioiodines and Particulates Dose	Determinat	ion
3.1	$7E - 8\sum_{i} \left[\left[R_{i\tau_{G}} + R_{i\tau_{M}} + R_{i\tau_{v}} + R_{i\tau_{B}} \right] \right]$][0.5 W _{pv} Q	$Q_{i_{pv}} + W_{cv}Q_{i_{cv}} +$
	$W_{vv}Q_{i_{vv}} + W_{tv}Q_{i_{tv}} + W_{cb}Q_{cb}$	$Q_{i_{cb}} + W_{dv}$	Q _{idv} + W _{wv} Q _{iwv}]
and the second	$+R_{i\tau_{I}}[0.5(X/Q)_{pv}Q_{i_{pv}}+(X)_{pv}]$	K/Q) _{cv} Q _{i_{cv}}	$+(X/Q)_{vv}Q_{i_{vv}} +$
	$(X/Q)_{tv}Q_{i_{tv}} + (X/Q)_{cb}Q_{i_{cb}}$ $Q_{i_{wv}}]$	"+ (X/Q) _d	v ^Q i _{dv} + (X/Q) _{wv}] [2.3-21]
	0.3 mrem (per 31 days), or 7.5 mrem (per quarter), or 5.0 mrem (per year)		

	Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02	
Title:		Unit: Level Of Use: 1/2 In-Field Ref	
ODCM: GA	ASEOUS EFFLUENTS	Revision: Page Number: 1 56 of 1	
	where:		
	$R_{i\tau_G}$ = Dose factor for a	an organ "τ" for radionuclide "i" for the g	groun
	•	pathway (mrem/yr per uCi/sec per m ⁻²).	
	$R_{i\tau_M}$ = Dose factor for a	an organ "t" for radionuclide "i" for eithe	er the
	•-	t milk pathway (mrem/yr per uCi/sec per	r m ⁻²)
	$R_{i\tau_v}$ = Dose factor for a	an organ " τ " for radionuclide "i" for the	
	vegetable pathw	ray (mrem/yr per uCi/sec per m ⁻²).	
	$R_{i\tau_B}$ = Dose factor for a	an organ "t" for radionuclide "i" for the r	neat
	pathway (mrem/	/yr per uCi/sec per m ⁻²).	
	I C I	an organ " τ " for radionuclide "i" for the	
	-	vay (mrem/yr per uCi/m ³).	_
	It should be noted that W_{pv} , W_{cv} [2.3-21] are in terms of D/Q(m	v, W _{vv} , W _{tv} , W _{cp} , W _{dv} , and W _{wv} in Equat ²).	ion
		vere calculated using the methodology of wing equations were used for all nuclide	
	8.3.2.1.2.2 Dose Factors For Inhala	ntion Pathway	
•	$R_{i\tau_1} = K'(BR)_a(DFA_{i\tau})_a$		
·	= mrem/yr per uCi/m ³	[2.3	8-22]
	where:		
	K' = A constant c	of unit conversion (1E6 pCi/uCi).	
	$(BR)_a = The breathing$	ng rate of the receptor of age group "a" (1	m³/yr
	group "a" fo dose factors are given in	inhalation dose factor for the receptor of or the "i" th radionuclide (mrem/pCi). Inf (DFA_{it}) by organ for the various age gr Table E-7 through E-10 of Regulatory C $1^{(3.1.3.5)}$ or Tables 5 through 8 of NUREC	nalati roups Juide

. :

Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-2.02
ODCM: GASEOUS EFFLUENTS	Unit: <u>1/2</u> Revision: 1	Level Of Use: In-Field Reference Page Number: 57 of 128
The breathing rates (BR)a used for the vario as given in Table E-5 of the Regulatory Gui <u>Age Group(a)</u> <u>Breathing Rate (m³/yr)</u>	ous age group de 1.109. ^{(3.1.3}	s are tabulated below 5)
Infant 1400 Child 3700		
Teen8000Adult8000		-
8.3.2.1.2.3 Dose Factors For Ground Plane Pa	<u>thway</u>	
$R_{i\tau_{G}} = K'K'' (SF)DFG_{i\tau}[(1 - e^{\lambda_{i}t})/\lambda_{i}]$		
$= m^2$ -mrem/yr per uCi/sec		[2.3-23]
where: K' = A constant of unit converses	ersion (1E6 p	Ci/uCi).
K'' = A constant of unit converses	ersion (8760 l	nr/year).
λi = The decay constant for t t = The exposure time (4.73)		
$DFG_{i\tau}$ = The groundplane dose c the "i" th radionuclide (in of DFG _i values is prese Guide 1.109. ^(3.1.3.5)	nrem/hr per p	pCi/m ²). A tabulatio
SF = The shielding factor (dia 0.7 as suggested in Table used. ^(3.1.3.5)		
8.3.2.1.2.4 $ \frac{\text{Dose Factors For Cow Milk or Gos}}{R_{i\tau_{M}}} = K' \frac{Q_{F}(U_{sp})}{\lambda_{i} + \lambda_{w}} F_{m}(r) (DFL_{i\tau})_{s} \left[\frac{f_{p}f}{Y_{p}} \right]_{s} $		$\frac{way}{e^{-\lambda}i'h}e^{-\lambda}i'f$
$= m^2$ -mrem/yr per uCi/sec		_ [2.3-24]
where:		*

Bea	aver Valley Po	owe	er Station	Procedure Nu	,
Title:				Unit:	1/2-ODC-2.02 Level Of Use:
				1/2 Revision:	In-Field Reference Page Number:
ODCM: GASEO	US EFFLUENTS		<u>·</u>		58 of 128
	K'	=	A constant of unit conversio	n (1E6 pC	Ci/uCi).
	QF	=	The animal's consumption ra	ate, wet we	eight (kg/day).
	U_{ap}	=	The receptor's milk consumption of the receptor of	ption rate,	for age "a" (liters/yr)
	Y _p	Ξ	The agricultural productivity grass (kg/m2).	y by unit a	rea of pasture feed
-	Ys	=	The agricultural productivity (kg/m2).	y by unit a	rea of stored feed
	Fm	=	The stable element transfer	coefficient	ts (days/liter).
	r .	Π	Fraction of deposited activit grass.	y retained	on animals feed
	(DFL _{it})₄	=	The maximum organ ingesti radionuclide for the receptor Ingestion dose factors (DFI are given in Table E-11 thro $1.109^{(3.1.3.5)}$ or Tables 1 thro	r in age gr τ)a for the ough E-14	oup "a" (mrem/pCi). e various age groups of Regulatory Guid
•	λ_i	=	The decay constant for the	"i" th radio	onuclide (sec-1).
•	λ _w	=	The decay constant for remo surfaces by weathering 5.73 day half-life).	oval of act E-7 sec ⁻¹ (ivity on leaf and pla (corresponding to a 1
	t _f	=	The transport time from pas receptor (sec).	ture, to an	imal, to milk, to
- 1 2-	t _h	=	The transport time from pasmilk, to receptor (sec).	ture, to ha	urvest, to animal, to
	f _p	: =	Fraction of the year that the (dimensionless).	animal is	on pasture
	:	Ξ	Fraction of the animal feed animal is on pasture (dimen	-	
			are the parameter values used latory Guide 1.109. ^(3.1.3.5)	l for cow's	milk and their
					-
				•	• •

Bea	aver Valley Power	r Station	Procedure Nu	mber: 1/2-ODC-2.02
Title: ODCM: GASEO		nang sama sa	Unit: 1/2 Revision:	Level Of Use: In-Field Referen Page Number:
ODCM: GASEO	US EFFLUEN IS		1	59 of 128
•	Parameter r (dimensionless)	Value 1.0 for radioiodine	E-15	RG. 1.109 Table
		0.2 for particulates	E-15	
	F _m (days/liter)	each stable element	•	cow milk) goat milk)
ne stern av den. De state	U _{ap} (liters/yr) - infant child	330 330	E-5 E-5	
	teen	400	E-5 E-5	
	adult	310	E-5	
	(DLF _{it}) _a (mrem/pCi)	each radionuclide	E-11	to E-14
	$Y_p (kg/m^2)$	0.7	E-15	
	Y _s (kg/m ²)	2.0	E-15	
	t _f (seconds)	1.73E5 (2 days)	E-15	
	t _h (seconds)	7.78E6 (90 days)	E-15	
•	Q _F (kg/day)	50	E-3	
	f _p	0.5		
	f _s	1.0	· . •••	· · ·
•	For goat's milk, all value	s remain the same except f	or Q _F , whi	ch is 6 kg/day.
. 8.3.2	_	s For Meat Pathway		
· 1964	$R_{i\tau_{B}} = K' \frac{Q_{F} \left(U_{a} \right)}{\lambda_{i} + \lambda_{i}}$	$\frac{dp}{w} F_{f}(r)(DFL_{i\tau})_{a} \left[\frac{f_{p}f_{s}}{Y_{p}} + \frac{f_{p}f$	$+\frac{\left(1-f_{p}f_{s}\right)}{Y}$	$\frac{e^{-\lambda_i t_h}}{s} = -\lambda_i t_f$
	$= m^2 - mrem/y_1$	r per uCi/sec		[2.3-25
		e element transfer coefficie	ents (days/l	(g).
	$U_{ap} = The recept$	otor's meat consumption ra	te for age "	a <u>"</u> (kg/yr).
1			•	

	Station	Procedure Number: 1/2-ODC-2.02			
······································		Unit:	Level Of Use:		
		<u>1/2</u> Revision:	In-Field Reference Page Number:		
JASEOUS EFFLUENTS	· · · · ·	1.	60 of 128		
$t_f = The averag$ (sec).	e time from slaughter of m	eat animal	l to consumption		
t_h = The transpo	ort time from crop field to	receptor (s	sec).		
		btained fr	om Regulatory Guid		
Parameter	Value	R	<u>RG-1.109 Table</u>		
F _f (days/kg)	each stable element	E-1			
t _f (seconds)	1.73E6 (20 days)	E-15			
U _{ap} (kg/yr) - infant	0	E-5			
Child	. 41	E-5			
Teen	65	E-5			
Adult	110	E-5			
	nsume 2 types of vegetatic between harvest and consu	•	-		
8.3.2.1.2.6 Dose Factors	For Vegetation Pathway				
$R_{i\tau_{v}} = K \left[\frac{(r)}{Y_{v}(\lambda_{i} + \frac{1}{2})} \right]$	$\overline{\lambda_{w}}$ $\left[(DFL_{i\tau})_{a} \left[U_{a}^{L} f_{L}^{e} \right] \right]$	$\lambda_i^{t}L + U_a^{S}$	$\left[\int_{g} e^{-\lambda_i t_h}\right]$		
$= m^2 - mrem/yr$	per uCi/sec		[2.3-26]		

|_**|**_

K' = A constant of unit conversion (1E6 pCi/uCi).

 $\mathbf{f}_{\mathbf{g}}$

 U_a^L = The consumption rate of fresh leafy vegetation by the receptor in age group "a" (kg/yr).

 U_a^S = The consumption rate of stored vegetation by the receptor in age group "a" (kg/yr).

 f_L = The fraction of the annual intake of fresh leafy vegetation grown locally.

= The fraction of the annual intake of stored vegetation grown locally.

Ве	aver Valle	y Power	r Station		Procedure	Number: 1/2-ODC-2.02	
Title:					Unit:	Level Of Use:	
					1/2	In-Field Re	ferenc
ODCM: GASEO	US EFFLUEN	ГS			Revision:	Page Number:	• • • •
					1	61_of_1	28
	t _L ≓	The avera consumpti	ge time between h on (seconds).	arvest of	leafy veg	getation and its	
	t _h '=	The average consumpti	ge time between h on (seconds).	arvest of	stored ve	egetation and its	
· · · ·			A CARE AND A CARE	•			
•	' Y _v =	The vegeta	ation area density	(kg/m²).			
	all other fac	tors are defi	ned previously.			·	
•	Tabulated b Regulatory	elow are the Guide 1.109	e appropriate parai (3.1.3.5)	meter valu	ies and t	heir reference to	-
		•		• •	· .	41. ¹¹	,
	<u>Param</u>		Value			G-1.109 Table	
	r (dimension)	•	1.0 for radioiod		E-15		
	•		0.2 for particula	ites	E-15	\$	
	(DFL _{it}) _a (mro	em/pCi)	each stable elem	nent	E-11 to	o E-14	
45 - 16 - 47 - 11 - 7.	U ^L _a (kg/yr) -	infant	0	, · . ·	E-5	· · · ·	i
,		Child	. 26		E-5		:
•	ʻ.	teen	42 • • • • •	• • • • • • • •	E-5	•	1
		adult	64		E-5		
	U ^S a (kg/yr) -	infant	• 0 • • • • • • • •		E-5	:	-
_		child	520		E-5	-	-
	• • • •	teen 👋 🖂	630		E-5		1
		adult	520		E-5		:
	fL (dimensior		1.0		E 16	•	;
	T (onnonsion	11000	1.0		E-15	·	•
	Fg (dimension	iless)	0.76	• • • •	E-15	-	:
	- E (11. A.A.	IC-15		
- 91 se	tL (seconds)	· · · ·	8.6E4 (1 day)	• •	E-15		
`:			· · · · ·		 -		•
	th (seconds)		5.18E6 (60 days)	E-15		
	$Y_{v} (kg/m^{2})$		2.0	•	E-15	1.*	
	- γ της μη γ (0		•
				• •		,	
As c	liscussed in Sec	ction 8.2.2 fo	or tritium, the para	ameter W	for the f	ood pathway is l	based

:

•

· · .

Ę.

.~

CFR 190, discussed in 1/2-ODC-2.04, as follows:

1.1.1.1.1.1

Beaver Valley Power Station	Procedure Nu	· · · · ·
File:	Unit:	1/2-ODC-2.02 Level Of Use:
	1/2	In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revisioa:	Page Number: 62 of 128
8.3.2.1.2.7 <u>Tritium Dose Equation</u>		
$3.17E - 8(R_{T\tau_{M}} + R_{T\tau_{V}} + R_{T\tau_{B}} + R_{T\tau_{I}}) [0.5]$	(X/Q) _{pv} Q _{T_{pv}} +	• (X/Q) _{cv} Q _{T_{cv}} +
$(X/Q)_{vv}Q_{T_{vv}} + (X/Q)_{tv}Q_{T_{tv}} + (X/Q)_{cb}Q_{\tau_{cb}} +$	(X/Q) _{dv} Q _{r_{dv}} -	+ (X/Q) _{wv} Q _{τwv}]
		[2.3-27]
where:		-
$R_{T\tau_M}$ = Dose factor for organ " τ " for tritium fo uCi/m ³).	or the milk pathw	yay (mrem/yr per
$R_{T\tau_V}$ = Dose factor for organ " τ " for tritium for uCi/m ³).	or the vegetable p	oathway (mrem/yr per
$R_{T\tau_B}$ = Dose factor for organ " τ " for tritium for uCi/m ³).	or the beef pathw	ay (mrem/yr per
$R_{T\tau_{I}} = Dose factor for organ "\tau" for tritium foruCi/m3).$	or the inhalation	pathway (mrem/yr per
Equation [2.3-27] is used to show compliance with ODC-2.04.	40 CFR 190, as	discussed in 1/2-
The concentration of tritium in milk is based on the deposition. Therefore, the RTr_M is based on [X/Q]:	e airborne concer	ntration rather than the
8.3.2.1.2.8 <u>Tritium Dose Factors For Milk I</u>	Pathway	
$R_{T\tau_M} = K'K''F_mQ_FU_{ap}(DLF_{i\tau})_a[0.75(0.5/H)]$:
= mrem/yr per uCi/m ³		[2.3-28]
where:		
K" = A constant of unit conversion (1000 g	m/kg).	
H = Absolute humidity of the atmosphere	(8 gm/m ³).	
0.75 = The fraction of total feed that is water	•	
0.5 = The ratio of the specific activity of the water.	e feed grass wate	r to the atmospheric
		•

•

.

,

: .

:

•

• • • • • • • •

.;

.

•

I_**I**_

•

R	Beaver Valley Power Station		Procedure Number:	
			1/2-ODC-2.02	
Title: ODCM: GASE	OUS EFFLUENTS	Unit: <u>1/2</u> Revision:	Level Of Use: In-Field Referenc Page Number:	
· · · ·			<u> </u>	
$\left\{ 1, \dots, n \right\}$	and other parameters and values are the same as f	or Ritm.		
· ·	The concentration of tritium in vegetation is based than the deposition. Therefore, the $R_{t\tau_v}$ is based of		e concentration rathe	
8.3	3.2.1.2.9 <u>Tritium Dose Factors For Veget</u>	ation Pathway		
· · · ·	$R_{T\tau_{V}} = K'K' \left[U_{a}^{L}f_{L} + U_{a}^{S}f_{g} \right] \left(DFL_{i\tau} \right)_{a} \left[0.75 \right]$	0.5/H)] [;]		
	= mrem/yr per uCi/m ³		[2.3-29]	
(a. 1	where all terms have been defined above.			
	The concentration of tritium in meat is based on i the deposition. Therefore, the $RT\tau_B$ is based on [2]	•	entration rather than	
8.3	3.2.1.2.10 <u>Tritium Dose Factors For Beef I</u>	<u>Pathway</u>		
· ·	$R_{T\tau_{B}} = K'K'F_{f}Q_{F}U_{ap}(DFL_{i\tau})_{a} [0.75(0.5/H)]$			
•	= mrem/yr per uCi/m ³		[2.3-30]	
	where all terms have been defined above.	· ·. ··		
stand and a	To show compliance with ODCM CONTROLS 3 21] is evaluated at the controlling pathway location the controlling location is a residence 0.89 miles appropriate X/Q values from ATTACHMENT F from ATTACHMENT L Tables 2.3-28 to 2.3-34	on. For Release in the NW secto Tables 2.2-4 to , Equation [2.3-2	Modes 1 through 4, r. Inserting 2.2-10 and D/Q valu	
8.3.2	1.3 <u>Radioiodines and Particulates Dose D</u>			
i i i i i i i i i i i i i i i i i i i	$3.17E - 8 \sum_{i} [[R_{i\tau_{G}}] + R_{i\tau_{V}}] [(0.5)4.22]$	$E - 10 Q_{i_{pv}} + 1.$	$56E - 8Q_{cv} + 1.56E$	
· #	$Q_{i_{vv}} + 1.55E - 8Q_{i_{tv}} + 1.55E - 8Q_{i_{cl}}$	+1.56E - 8Q	+1.56E-8	
·	$Q_{i_{wv}}] + R_{i\tau_{I}}[(0.5)7.30E - 9Q_{i_{pv}} + 2]$	$.00E - 5Q_{i_{cv}} +$	2.71E – 5 Q _{ivv}	
	+ $2.22E - 5Q_{iv} + 2.22E - 5Q_{ic} + 2.22E - 5Q_{ic}$	· · · · · · · ·	2.00E-5Q _{iwv}] -	

a state and see a

.

.

1 march

•

· · ·	and the second			
Beaver Valley Power Station		Procedure Number: 1/2-ODC-2.02		
ĩtle:		Unit: 1/2	Level Of Use: In-Field Reference	
DCM: GASEOUS EFFLUENTS		Revision: 1	Page Number: 64 of 128	
	\leq 0.3 mrem (per 31 days), or \leq 7.5 mrem (per quarter), or \leq 15.0 mrem (per year)		[2.3-31]	
	For tritium, for purposes of implementation [2.3-28] reduces to		90, as discussed in	
	$3.17E - 8[R_{T\tau_v} + R_{T\tau_l}][(0.5)7.30E - 9Q]$	i _{pv} + 2.00E	$-5Q_{i_{cv}} + 2.71E - 0$	
	$5Q_{ivv} + 2.22E - 5Q_{iv} + 2.22E$	$E-5Q_{i_{cb}} + 2$	$2.00E - 5Q_{i_{dv}} + \frac{1}{2}$	
	$2.00E - 5 Q_{i_{wv}}$]		[2.3-32]	
8.3.2.1.4	Determination of Controlling Location			
	The determination of a controlling locating f CONTROLS 3.11.2.3 and 3.11.2.4 for radio function of:	•		
	 Radionuclide mix and their isotopic release Release Mode 	ase		

Meteorology

• Exposure pathway

Receptor's age

The incorporation of these parameters into Equation [2.3-19] results in the respective equations for each Release Mode at the controlling location.

In determination of the controlling location for each Release Mode, the radionuclide mix of radioiodines and particulates was based upon the source terms calculated using the GALE code. This mix was presented in ATTACHMENT D Tables 2.2-2a and 2.2-2b as a function of Release Mode and Release Point. For the ground plane exposure pathway, all radionculides (excluding H-3 and C-14) were considered in determination of the controlling location. For the inhalation and food pathways H-3 and C-14 were also considered in determination of the controlling location.

In determination of the controlling location for each Release Mode, all of the exposure pathways, as presented in ATTACHMENT E Table 2.2-3, were evaluated. These include cow milk, goat milk, beef and vegetable ingestion and inhalation and ground plane exposure. An infant was assumed to be present at all milk pathway locations. A child was assumed to be present at all vegetable garden and beef animal locations. The ground plane and inhalation exposure pathways were considered to be present at all locations.

Beaver Valley Power Station	Procedure Nu	imber:
Title:	Unit: 1/2	Level Of Use: In-Field Referenc
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 65 of 128
For determination of the controlling location, for each Release Point and Release Mode for and goat milk pathways were selected. The o of these locations using the radionuclide mix ATTACHMENT D Tables 2.2-2a and 2.2-2b was determined that the controlling location f the residence (vegetable garden)/child pathwa	the vegetab organ dose w and Release Based upor for Release 1	le garden, cow milk vas calculated at eac e Points of a these calculations,
For Release Modes 1 through 4, the controllin and VV-2.	ng Release I	Point and mix is VV
ATTACHMENT J Tables 2.3-2 through 2.3-2 body, GI-LLI, bone, liver, kidney, thyroid, an plane, inhalation, cow milk, goat milk, vegeta for the infant, child, teen, and adult age group These values were calculated using the metho 0133 ^(3.1.3.1) using a grazing period of 6 month	d lung organ able, and me os as approp odology dese	ns for the ground eat ingestion pathwa riate to the pathway
In determination of the controlling location for ATTACHMENT F Tables 2.2-4 through 2.2- ATTACHMENT L Tables 2.3-28 through 2.3 D/Q values. A description of the derivation of is presented in 1/2-ODC-3.01.	10 are utiliz 3-34 are util	ed for X/Q's, and ized for long term
Long-term D/Q values for PV-1/2, CV-1, CV DV-2 AND WV-2 are provided for the midp		
. 0.0-0.5 mi., 0.5-1.0 mi., 1.0-1.5 mi., 1.5-2.0 m 2.5-3.0 mi., 3.0-3.5 mi., 3.5-4.0 mi., 4.0-4.5 m		
The values appear in ATTACHMENT K Tak values may be utilized if an additional specia those presented in the special locations of AT	l location a	rises different from
The following relationship must hold for BV with ODCM CONTROL 3.11.2.3.	-1 or BV-2	to show compliance
For The Calendar Quarter:		10 0 000
D _τ ≤ 7.5 mrem to any organ For The Calendar Year:	··· ·	[2.3-33]
$D_{\tau} \leq 15$ mrem to any organ		[2.3-34]
where:		1

•

•

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02		
Title:	Unit: 1/2	Level Of Use: In-Field Reference	
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 66 of 128	

 D_{τ} = The dose to any organ from radioiodines and particulates (mrem).

The quarterly limits given above represent one-half the annual design objective of Section II.C of Appendix I of 10 CFR 50. If any of the limits of Equations [2.3-33] and [2.3-34] are exceeded, a Special Report pursuant to both Section IV.A of Appendix I of 10 CFR 50 and ODCM CONTROL 3.11.2.3.a must be filed with the NRC at the identified locations.

8.3.2.2 Projection Of Doses (Radioiodines And Particulates)

Doses due to gaseous releases from BV-1 or BV-2 shall be projected at least once per 31 days in accordance with ODCM CONTROL 4.11.2.4 and this section. (Also see Section 8.3.1.2, <u>Projection Of Doses</u> for additional specifications). The appropriate portions of the Ventilation Exhaust Treatment System shall be used to reduce radioactive materials in gaseous waste prior to their discharge in accordance with ODCM CONTROL 3.11.2.4 when the projected doses due to gaseous effluent releases from each reactor unit, when averaged over 31 days, would exceed 0.3 mrem to any organ. (Also see Section 8.3.1.2, <u>Projection Of Doses</u> for additional specifications). Doses resulting from the gaseous effluent release of radioiodines and particulates will be calculated for use in the 31-day dose projection using Equation [2.3-31]. The 31-day dose projection shall be performed according to the following equations:

8.3.2.2.1

When Including Pre-Release Data,

$$D_{31} = \left[\frac{A+B}{T}\right](31) + C$$
 [2.3-35]

8.3.2.2.2

When Not Including Pre-Release Data,

$$D_{31} = \left[\frac{A}{T}\right](31) + C$$
 [2.3-36]

where:

 D_{31} = Projected 31 day dose (mrem).

A = Cumulative dose for quarter (mrem).

B = Projected dose for this release (mrem).

T = Current days into quarter.

C = Value which may be used to anticipate plant trends (mrem).

Be	eaver Valley Power Station	Procedure Number: 1/2-ODC-2.02		
Title:		Unit:	Level Of Use:	
· ·	, 	1/2	In-Field Reference	
ODCM: GASE	DUS EFFLUENTS	Revision:	Page Number: 67 of 128	
8.4 Gaseou	s Radwaste System		· · · · · · · · · · · · · · · · · · ·	
dispose	eous radwaste system has the capability to control, of gaseous radioactive waste generated as a result o ted operational occurrences.			
ATTAC provided system i either B	ified flow diagram of the gaseous radwaste system HMENT N Figure 2.4-1. A diagram showing the d as ATTACHMENT P Figure 2.4-2. Since the cor s used, then gaseous waste generated can be stored V-1 or BV-2. -1 Gaseous Radwaste System Components	gaseous effluer ncept of a share	t Release Points is ed gaseous radwaste	
8.4.1.1	BR-1EV-2A/2B: Degasifiers		· · ·	
ten enginte d Kulonovi	There are two Degasifiers. They are designed to letdown for reducing entrained noble gases in th		process reactor coola	
8.4.1.2	GW-1E-1A/1B: Waste Gas Chillers	<u> </u>		
•	There are two Chillers. Non-condensable gases system pressure to the Waste Gas Chillers.	from the degas	sifiers are directed by	
8.4.1.3	GW-1TK-3A thru 3D: Gaseous Waste Chard	<u>coal Delay Bed</u>	<u>ls</u>	
• • •	There are four Charcoal Beds. The dry effluent Waste Gas Charcoal Delay Beds for holdup of x radioiodines. When four beds are operated in se isotopes for about 30 days.	enon and kryp	ton and adsorption o	
8.4.1.4	GW-1FL-5A/5B: Overhead Gas Compressor	• Prefilters		
۰. تواور	There are two Prefilters. The gaseous effluent (the Gaseous Waste Charcoal Delay Beds to one Prefilters. The filters remove carbon solids from	of the Overhea	d Gas Compressor	
8.4.1.5	<u>GW-1C-1A/1B: Gas Compressors</u>	i da teran. Na serencia		
	There are two Compressors. The waste gas enterpassing through the Prefilters.	ers one of the c	ompressors after	
8.4.1.6	<u>GW-1TK-2: Gaseous Waste Surge Tank</u>		5	
	There is one Surge Tank. It has a capacity of 52 psig, the waste gas is sent to the Surge Tank. T manually.			

• •• •

.....

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02		
Title:	Unit: 1/2	Level Of Use: In-Field Reference	
ODCM: GASEOUS EFFLUENTS	Revision: 1	Page Number: 68 of 128	

8.4.1.7 <u>GW-1TK-1A thru 1C: Waste Gas Decay Tanks</u>

There are three Decay Tanks. Each has a capacity of 132 cuft. The contents of the Surge Tank is transferred to the Decay Tanks for storage and decay. After 30 days of storage, all xenon and iodine should have decayed, and the resulting predominant nuclide should be krypton 85.

8.4.1.8 RM-1GW-108 And RM-1GW-109: Gaseous Effluent Radiation Monitors

There are redundant Radiation Monitors on the combined PV-1/2 Gaseous Waste/Process Vent release path. These Radiation Monitors continuously analyze gaseous waste as it is being discharged. Gaseous Monitor RM-1GW-108B is an offline gamma scintillator, while RM-1GW-109 Channel 5 is an off-line beta scintillator. The upper activity alarm on the gaseous Channels of these Radiation Monitors have setpoints that would indicate we are approaching the Total Body Dose Rate or Skin Dose Rate limits for radioactive gas leaving the site. If an upper activity alarm on RM-1GW-108B is received, it automatically terminates the discharge by closing an isolation valve downstream of the Decay Tanks.

8.4.2 BV-2 Gaseous Radwaste System Components

8.4.2.1 <u>2BRS-EV21A/21B: Degasifiers</u>

There are four Degasifiers (two at Unit 1 and two at Unit 2). They are designed to continuously process reactor coolant letdown for reducing entrained noble gases in the liquid.

8.4.2.2 2GWS-E21A/21B: Waste Gas Chillers

There are four Chillers (two at Unit 1 and two at Unit 2). Non-condensable gases from the degasifiers are directed by system pressure to the Waste Gas Chillers.

8.4.2.3 2GWS-TK22A thru 22D: Waste Gas Charcoal Delay Beds

.

There are four Charcoal Beds (four at Unit 1 and four at Unit 2). The dry effluent from the Chillers is directed to the Waste Gas Charcoal Delay Beds for holdup of xenon and krypton and adsorption of radioiodines. When four beds are operated in series, they provide a holdup of xenon isotopes for about 30 days.

8.4.2.4 2GWS-FLT24A/24B: Overhead Gas Compressor Prefilters

There are two Prefilters. The gaseous effluent (primarily hydrogen) is directed from the Waste Gas Charcoal Delay Beds to one of the Overhead Gas Compressor Prefilters. The filters remove carbon solids from the gas stream.

Beaver Valley Power Station			P	Procedure Number: 1/2-ODC-2.02		
itle:			<u> </u>	Ū	lait: 1/2	Level Of Use: In-Field Reference
DDCM: GASE	OUS EFFLUEN	ITS		R		Page Number: 69 of 128
8.4.2.5	2GWS-C214	A/21B: Gas Co	ompressors			
		o Compressors. 1gh the Prefilter	The waste gas e s.	enters one	of the co	ompressors after
8.4.2.6	2GWS-TK21: Gaseous Waste Surge Tank There is one Surge Tank. It has a capacity of 52 cuft. After compression to abo psig, the waste gas is sent to the Surge Tank. This can be done automatically or manually.					
8.4.2.7	2GWS-TK2	<u>5A thru 25G:</u>	Gaseous Waste	Storage 7	<u>anks</u>	
	Surge Tank i of storage, al	s transferred to	the Storage Tan line should have	ks for stora	ige and	t. The contents of t decay. After 30 day esulting predomina
8.4.2.8	<u>RM-1GW-1</u>	08 And RM-10	GW-109: Gased	ous Efflue	nt Radia	ation Monitors
1231 •	Previously d	escribed in Sec	tion 8.4.1.	- • • *	••	
	,	····· ,··· ,·		2 3 3 5 2 2 3 4		·
•	··· ·		- ENI	J =		· • · · ·
, ,	•			• • •		
	1 · · · ·	•	•			
	•	1		•		•
	• · · · · · · · · · · · · · · · · · · ·	t the contract An North Contract			••	, e
· · · · · · · · · · · · · · · · · · ·	,		· · ·	1		· · · · · · · · · · · · · · · · · · ·
· .	• <i>•</i>	÷.	1	,		
· •.	•.	23.52	. : •	*• <u> </u>		. • .
El s de proces	· • * · · · ,		len Hondonius) Ans Zonane E I Zuris en S	n fin de se	- 31-	a fraga a fraga
		fill and the second s Second second	yrinaciae a Nagarth Car Attico Samaa		· · · .	n ng Kabupatén Produktion

:

)

; (

.

•

٢.

і. Т

Beav	ver Valley P	ower Stati	on	Procedure Num	12-ODC-2.02
Title:		····		Unit:	Level Of Use:
				1/2	In-Field Reference
ODCM: GASEOUS	SEFELLIENTS			Revision:	Page Number:
			• • •	1	70 of 128
		ATTACHN	MENT A		
		Page 1	of 2		
		GASEOUS SOU			
		1495009900			
		•			
		TABLE	2.1-1a		
			, .		
	BV-1 RADION			S EFFLUENTS	5
		(Ci/	yr)		
	RX	AUXILIARY			• .
	CONTAINMENT/		· · · · ·	s i s	
	SLCRS VENT	VENT	GASEOUS	WASTE/PROCE	SS VENT
	Long Term, And			WINDIGHT ROOL	<u>55_712111</u>
			MADI		
	CONTRAIND	AUXILIARY	MAIN	CONTAINMEN	
NUCLIDE ⁽²⁾	CONTAINMENT BUILDING ⁽¹⁾	BUILDING VENTILATION	CONDENSER/ AIR EJECTOR	VACUUM PUMPS ⁽³⁾	WASTE <u>SYSTEM</u>
NUCLIDE					
	Short Term	Long Term	Long Term	Long Term	Short Term
Kr-83m	2.2E-02	4.2E-01	2.7E-01	5.2E-03	0.0
Kr-85m	1.5E-01	1.9E+00	1.2E+00	5.5E-02	• 7.3E-02
Kr-85	6.1E+01	2.5E+00	1.6E+00	1.0E+01	2.3E+02
Kr-87	5.4E-02	1.3E+00	8.2E-01	1.1E-02	0.0
Kr-88	2.4E-01	3.8E+00	2.4E+00	7.0E-02	0.0
Kr-89	4.7E-04	1.2E-01	7.7E-02	4.3E-05	0.0
Xe-131m	7.4E-01	1.3E-01	8.0E-02	1.8E-01	1.3E+00
	8.9E-01	8.9E-01	5.6E-01	3.1E-01	0.0
Xe-133m				2.7E+01	2.3E+01
	8.9E+01	3.6E+01	2.3E+01	2007 A21 VI	ZIJETUI
Xe-133m		3.6E+01 3.2E-01	2.3E+01 2.0E-01	6.2E-04	. 0.0
Xe-133m Xe-133	8.9E+01				
Xe-133m Xe-133 Xe-135m	8.9E+01 4.5E-03	3.2E-01	2.0E-01	6.2E-04	. 0.0
Xe-133m Xe-133 Xe-135m Xe-135	8.9E+01 4.5E-03 7.0E-01	3.2E-01 4.5E+00	2.0E-01 2.8E+00	6.2E-04 2.7E-01	. 0.0 0.0

(1) Containment can be purged via VV-1 (Auxiliary Building Vent), CV-1 (Rx Containment/SLCRS Vent), or PV-1/2 (Gaseous Waste/Process Vent)

(2) Source Term from BVPS-2 UFSAR Table 11.3.1 $^{(3.1.1.2)}$

⁽³⁾ Original Source Term from Calculation No. UR(B)-262 was adjusted for a factor of 14 increase in pump flowrate due to installation of high capacity pumps during 1R15. This change in Source Term is documented in Condition Report CR03-04830 and Calculation No. ERS-HHM-87-014.

	Beaver Va	alley Powe	r Station	Pro	cedure Number:	
itic:	Bouror re			, , , , , , , , , , , , , , , , , , ,		DC-2.02
Icc.						n-Field Reference
DDCM: GA	SEOUS EFFLU	JENTS		Ret		Number:
					_1	71 of 128
			ITACHMENT :	A		
			Page 2 of 2			:
	- `	GASE	OUS SOURCE	IERM		3
			TABLE 2.1-1b			
	BV-2 I	RADIONUCLID	E MIX FOR GA	SEOUS EFFL	JUENTS	
			(Ci/yr)			1
		• • • • •		· · · · · ·	•	
	SLCRS	SLCRS	TURBINE			į
	UNFILTERED	FILTERED	BUILDING			•
· · ·	PATHWAY	PATHWAY	<u>VENT</u>	GASEOU	S WASTE/PR	DCESS VENT
	Long Term, And		er en en Helen anna en en en			
		AUXILIARY	TURBINE	MAIN	CONTAINM	
NUCLIDE ⁽²⁾	CONTAINMENT BUILDING ⁽¹⁾	BUILDING VENTILATION	BUILDING VENTILATION	CONDENSER/ AIR EJECTOR	VACUU PUMPS	
NUCLIDE_	Short Term	Long Term	Long Term	Long Term	Long Ter	
	Short Term	Long Term	Long Term	Long Term	Long Ter	m Short Tem
Kr-83m	4.0E-05	4.2E-01	3.9E-05	2.7E-01	3.7E-04	0.0
Kr-85m	1.4E-02	1.9E+00	1.7E-04	1.2E+00	3.9E-03	1.2E-02
'Kr-85 'Kr-87	6.1E+01 5.3E-06	2.5E+00 1.3E+00	2.3E-04 1.1E-04	1.6E+00 8.2E-01	7.2E-01 7.8E-04	2.3E+02 0.0
Kr-88	4.1E-03	3.8E+00	3.5E-04	2.4E+00	5.0E-04	0.0
Kr-89	0.0	1.2E-01	1.1E-05	7.7E-02	3.1E-06	0.0
Xe-131m	7.2E-01	1.3E-01	1.2E-05	8.0E-02	1.3E-02	8.3E-01
Xe-133m Xe-133	7.6E-01 8.4E+01	8.9E-01 3.6E+01	8.1E-05 3.4E-03	5.6E-01 2.3E+01	2.2E-02 1.9E-00	0.0 8.2E+00
Xe-135	0.0	3.2E-01	-2.9E-05	2.0E-01	4.4E-05	0.0
Xe-135	2.4E-01	4.5E+00	4.2E-04	2.8E+00	1.9E-02	0.0
Xe-137	0.0	2.1E-01	2.1E-05	1.3E-01	6.3E-06	
Xe-138 Ar-41	0.0 2.5E+01	1.1E+00 0.0	9.7E-05 0.0	6.6E-01 0.0	1.2E-04 0.0	0.0 0.0
M-41	* 2.JLTUI	0.0	.0.0	0.0	0.0	
(1) Contain			SLCRS Unfilter	d Dathurau)		Eiltorad
Contain	•	aseous Waste/P		u i aniway), C		S T Mered
			ble $11.3.2^{(3.1.2.3)}$			
⁽³⁾ Source	Term from Calc	ulation No. UR	(B)-262 ^(3.1.2.5)	• • • • •	• • • • •	•. •.
		1		-	•	•
				• •		
	•					
						÷
						ż
						•
						· :
					-	•
						•
				• •	•	• • •

 \cdot

•

;

a agent angent of a

1

•

.

	Beaver V	alley Pow	er Station	P	rocedure Number: 1/2-OD	C 2 02
ítle:					ait: Level O	
				ľ		Field Reference
DOCM. G	ASEOUS EFFL	TIENTS		R	evision: Page N	
	ASLOUS EFFL					72 of 128
			ATTACHMEN	ГВ		
			Page 1 of 2			
	GASEO	US EFFLUENT		TECTION EFF	ICIENCIES	
	011020			2011011211		
	•		•			
			TABLE 2.1-2	la :		
		BV-1 MONIT	OR DETECTO	R EFFICIENCI	ES	
			(cpm/uCi/cc			
			GASEOUS			AINMENT/-
NUCLIDE		UILDING VENT		S VENT		S VENT
NOCLIDE	PRIMARY	ALTERNATE	PRIMARY	ALTERNATE	PRIMARY	ALTERNATE
	MONITOR ⁽¹⁾	MONITOR ⁽²⁾	MONITOR ⁽¹⁾	MONITOR ⁽²⁾	MONITOR ⁽¹⁾	MONITOR ⁽²⁾
			• • •	1	RM-VS-107B	
	RM-VS-101B	RM-VS-109 Channel 5	RM-GW-108B	RM-GW-109 Channel 5	KM-VS-10/B	RM-VS-110 Channel 5
		Channel 3		Channel J		Channel J
Kr-83m			· ·			
Kr-85m	9.80 E7	2.39 E7	9.00 E7	2.43 E7	5.16 E7	2.57 E7
Kr-85	3.88 E5	2.47 E7	3.56 E5	2.51 E7	5.04 E7	2.67 E7
Kr-87	7.38 E7	2.95 E7	6.78 E7	3.00 E7	9.60 E7	3.19 E7
Kr-88	1.14 E8	2.11 E7	1.05 E8	2.14 E7	5.16 E7	2.28 E7
Kr-89	1.39 E8	2.93 E7	1.28 E8	2.98 E7	9.59 E7	3.16 E7 3.29 E7
Kr-90 Xe-131m	1.34 E8 2.25 E6	3.05 E7	1.23 E8 2.07 E6	3.10 E7 1.59 E7	9.87 E7	3.29 E7 1.68 E7
Xe-131m Xe-133m	2.25 E6 1.26 E7	1.56 E7 1.94 E7	2.07 E6 1.16 E7	1.59 E7 1.97 E7	2.94 E7 4.17 E7	2.09 E7
Xe-133m Xe-133	1.20 E7 1.01 E7	1.94 E7 1.24 E7	9.24 E6	1.97 E7 1.26 E7	4.17 E7 2.28 E7	1.33 E7
Xe-135 Xe-135m	7.15 E7	5.70 E6	9.24 E6 6.58 E7	5.80 E6	1.51 E7	6.15 E6
Xe-135m Xe-135	1.12 E8	2.91 E7	1.03 E8	2.96 E7	6.42 E7	3.14 E7
Xe-135 Xe-137	3.16 E7	2.91 E7 2.96 E7	2.91 E7	2.96 E7 3.01 E7	0.42 E7 1.05 E8	3.14 E7 3.19 E7
Xe-137 Xe-138	1.15 E8	2.96 E7 2.66 E7	2.91 E7 1.06 E8	2.70 E7	7.35 E7	2.87 E7
Ar-41	• 7.17 E7	2.00 E7 3.00 E7	6.59 E7	3.05 E7	7.19 E7	3.23 E7
<u>∩1-++1</u>	• 1.17 157	J.00 E 7	U.J7 G/	J.UJ EI	1.17 137	انا دي.د

⁽¹⁾ The listed detector efficiencies for the respective primary monitors (Victoreen) are corrected for the reduced pressures observed and documented during operation.

(2) The alternate monitors (Eberline SPING Channel 5) efficiencies are corrected for detector unique installation factors. (Pressure corrections are not required for the SPING Monitors.) See Calculation Package ERS-SFL-85-031 for additional information.^(3.1.1.4)

Be Be	eaver Valley	Power Stat	ion	Procedure Nur	
Title:				Unit:	/2-ODC-2.02 Level Of Use:
	· ,			1/2	In-Field Referen
ODCM: GASE	OUS EFFLUENTS	5		Revision:	Page Number:
			:		73 of 128
		ATTACH			· ·
			2 of 2		
	GASEOUS EFE	LUENT MONITO	DR DETECTION	EFFICIENC	ES
	,	TADI	E 2.1-2b		
	BV.2		ECTOR EFFICIE	VCIES	
· · · · · ·	D V-2		uCi/cc)		
	1 		-	1	an 1.
	ST CDS			•	CONDENS
	SLCRS	SLCRS FILTERED	WASTE GAS STORAGE	DECON	
NUCLIDE ^(I)	PATHWAY	PATHWAY	VAULT VENT		VENT BUILDING
	2HVS-RQ101B	2HVS-RQ109B	2RMQ-RQ303B	2RMQ-RQ30	
Kr-83m					and the second second
Kr-85m	3.20E7	5.83E7	3.20E7	3.20E7	3.20E7
Kr-85	3.60E7	7.19E7	3.60E7	3.60E7	3.60E7
Кг-87	3.73E7	8.85E7	3.73E7	· 3.73E7	3.73E7
Kr-88	3.05E7	6.80E7	3.05E7	3.05E7	3.05E7
Kr-89	3.72E7	8.73E7	3.72E7	3.72E7	3.72E7
Kr-90	3.86E7	8.80E7	3.86E7	3.86E7	3.86E7
Xe-131m Xe-133m	2.44E7	4.61E4	2.44E7 2.86E7	2.44E7 2.86E7	2.44E7 2.86E7
Xe-133m	2.86E7 1.80E7	6.06E4 2.94E7	1.80E7	2.80E7 1.80E7	1.80E7
Xe-135	7.22E6	1.55E4	7.22E6	7.22E6	7.22E6
Xe-135	3.86E7	7.48E7	3.86E7	3.86E7	3.86E7
Xe-137	3.78E7	9.07E7	3.78E7	3.78E7	3.78E7
Xe-138	3.52E7	7.74E7	3.52E7	3.52E7	3.52E7
	3.79E7	7.90E7	3.79E7	3.79E7	3.79E7
Ar-41			•		
A1-41	981 - 41+1 - 1 98				
· .	ies from Colculatio	n Doologo EDS (SET 86 026 (3.1.2.1)		
	ies from Calculatio	on Package ERS-S	SFL-86-026. ^(3.1.2.1)		
	ies from Calculatio	on Package ERS-S	SFL-86-026. ^(3.1.2.1)		antana antana antana antana
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	· · · · · · · · · · · · · · · · · · ·
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	· · · · · · · · · · · · · · · · · · ·
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	an an Alberton An Antonio Antonio Antonio Antonio
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	an an Alberton An Antonio Antonio Antonio Antonio
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	an an Alberton An Antonio Antonio Antonio Antonio
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	an an Alberton An Antonio Antonio Antonio Antonio
	ies from Calculatic	on Package ERS-S	SFL-86-026. ^(3.1.2.1)	•	an an Alberton An Antonio Antonio Antonio Antonio
· · · ·	•	· .		•	an an Alberton An Antonio Antonio Antonio Antonio
· .	•	· .			
· · · ·	•	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			an an Alberton An Antonio Antonio Antonio Antonio
	•	n Na sangarah sanas Na sangarah sanas	• • • • • • • • • • • • • • • • • •		
	•	t Novelagi to de o Novelagi to de origina		9. 1	
· · · ·	•	n Nava Papala Salaha Nava Papala Salaha Nava Papala Nava Paka		۰۰۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰ ۱۰	
	•	n Nava Papala Salaha Nava Papala Salaha Nava Papala Nava Paka			
· · · ·	•	n Nava Papala Salaha Nava Papala Salaha Nava Papala Nava Paka			
· · · ·	•	n Nava Papala Salaha Nava Papala Salaha Nava Papala Nava Paka			
· · · ·	•	n Nava Papala Salaha Nava Papala Salaha Nava Papala Nava Paka			

Beaver Va	lley Power St	tation	Procedure Numb	er: 2-ODC-2.02
DDCM: GASEOUS EFFLU	TENTS		Unit: 1/2	Level Of Use: In-Field Reference Page Number:
	Pa	CHMENT C ge 1 of 1 ASEOUS RELEA	II	<u>74 of 128</u>
	Ta EOUS RELEASE FI PLEMENTATION (ENTS FOR
RELEASE POINT	RELEASE MODE 1	RELEASE MODE 2	RELEASE MODE 3	RELEASE MODE 4
RP 1; VV-1, Auxiliary Building Vent ⁽¹⁾	Aux. Bldg. Ventilation	Containment Purge ⁽³⁾	Same As Mode	1 Same As Mode 1
RP 2; CV-1, Rx Containment/SLCRS Vent ⁽¹⁾	Leakage Collection Exhaust	Same As Mode 1	Same As Mode and Containmen Purge ⁽³⁾	
RP 3; PV-1/2, Gaseous Waste/Process Vent ⁽²⁾	Main Cond. Air Ejector, Waste Gas, Containment Vacuum	Same As Mode 1	Same As Mode	1 Same As Mode 1 and Containment Purge
RP 4; VV-2 SLCRS Unfiltered Pathway ⁽¹⁾	Contiguous Areas	Containment Purge ⁽³⁾	Same As Mode	1 Same As Mode 1
RP 5; CV-2, SLCRS Filtered Pathway Vent ⁽¹⁾	Aux. Bldg. Ventilation	Same As Mode 1	Same As Mode and Containmen Purge ⁽³⁾	
RP 6; CB-2, Condensate Polishing Bldg Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 7; WV-2, Waste Gas Storage Vault Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 8; DV-2, Decontamination Bldg Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 9; TV-2, Turbine Bldg Vent ⁽¹⁾	(4)	(4)	(4)	(4)

NOTE: For the purpose of implementing 10 CFR 50, batch discharges may use continuous meteorology since short term meteorology is used at the time of the annual report.

(1) Continuous ground level meteorology is applicable

⁽²⁾ Continuous elevated meteorology is applicable

⁽³⁾ Mode established by purge from one unit, all other release points remain same as Mode 1
 ⁽⁴⁾ Not normally a radioactive release point

Be	aver Valle	y Power Stati	on de la	Procedure Numb	
		<u></u>			2-ODC-2.02
Title:	· · · ·			Unit: 1/2	Level Of Use: In-Field Reference
					Page Number:
ODCM: GASEC	OUS EFFLUEN	ГS	•	1	75 of 128
		ATTACH	MENT D		
		🗧 Page 1	of 2		
		RADIONUC			
		TABLE	2.2-2a	. • · · · · · · · · · · · · · · · · · ·	
	BV-1 RAD	IONUCLIDE MIX I	FOR GASEOUS	EFFLUENTS	
		(Ci/	'уг)		
			• ,		
<u>.</u> .	RX				
	NTAINMENT/	AUXILIARY		· · · · · · · · · · · · · · · · · · ·	
	LCRS VENT	BUILDING VENT	GASEOU	IS WASTE/PRO	CESS VENT
Lo	ng Term, And				
	· · · · · ·	AUXILIARY	MAIN	CONTAINMEN	TT .
	ONTAINMENT	BUILDING	CONDENSER/	VACUUMM	
NUCLIDE ⁽²⁾	BUILDING ⁽¹⁾	VENTILATION	AIR EJECTOR	PUMPS ⁽³⁾	WASTE SYSTE
<u>т</u> - т	Short Term	Long Term	Long Term	Long Term	Short Term !
Kr-83m	2.2E-02	4.2E-01	2.7E-01	5.2E-03	0.0
Kr-85m	1.5E-01	1.9E+00	1.2E+00	5.5E-02	1.2E-02
-Kr-85	6.1E+01	2.5E+00	1.6E+00	1.0E+01	2.3E+02
Kr-87	5.4E-02	1.3E+00	8.2E-01	1.1E-02	0.0
' Kr-88		3.8E+00	2.4E+00	7.0E-02	0.0
Kr-89	4.7E-04	1.2E-01	7.7E-02	4.3E-05	0.0
-Xe-131m	7.4E-01	1.3E-01	8.0E-02	1.8E-01	8.3E-01
Xe-133m	8.9E-01	8.9E-01	5.6E-01	3.1E-01	
Xc-133	8.9E+01	3.6E+01	2.3E+01	2.7E+01	8.2E+00
Xe-135m	4.5E-03	3.2E-01	2.0E-01	6.2E-04 ··	0.0
Xe-135	7.0E-01	4.5E+00	2.8E+00	2.7E-01	0.0
Xe-137 Xe-138	1.0E-03 1.5E-02	2.1E-01	1.3E-01	8.8E-05	0.0
Xe-138 I-131	1.5E-02 1.2E-03	1.1E+00 4.6E-02	6.6E-01 2.1E-02	1.7E-03 6.6E-03	0.0 0.0
I-131 I-132	0.0	0.0	0.0	3.5E-05	
· I-133	2.0E-04	6.7E-02	3.0E-02	1.2E-03	0.0
· I-134	0.0	0.0	0.0 •	6.6E-06	0.0
I-135	0.0	0.0	0.0	2.0E-04	
Co-58	7.5E-04	6.0E-02	0.0	2.2E-04	0.0
Co-60	3.4E-04	2.7E-02	0.0	1.0E-04	0.0
Mn-54	2.2E-04	1.8E-02	0.0	6.9E-05	0.0
Fe-59 #-	·7.5E-05	6.0E-03 (* * *	0.0	2.2E-05	0.0
Sr-89	1.7E-05	1.3E-03	0.0	5.2E-06	0.0
Sr-90	3.0E-06	2.0E-04	0.0	9.2E-07	0.0
Cs-134	2.2E-04	1.8E-02	0.0	6.9E-05	0.0
Cs-137	3.8E-04	3.0E-02	0.0	1.2E-04	0.0
C-14	1.0E+00	0.0 I (.	0.0	0.0	7.0E+00
Ar-41	2.5E+01	0.0	0.0	0.0	0.0

Containment can be purged via VV-1 (Auxiliary Building Vent), CV-1 (Rx Containment/SLCRS Vent), or PV-1/2 (Gaseous Waste/Process Vent)
Source Term from BVPS-2UFSAR Table 11.3-1^(3.1.1.2)
See Note ⁽³⁾ from ATTACHMENT A Table 2.1-1a ^(3.1.1.5) (3.1.1.8) (3.1.3.10) the press of t . د .

_

	Beaver Va	llev Power	Station	Procedu	re Number:	
	Deaver va	ncy rowci	Station	•	<u>1/2-0DC-2.(</u>)2
Title:				Unit:	Level Of Use:	
				1/2		Reference
ODCM: GA	SEOUS EFFLU	ENTS		Revisio		c 100
······	<u> </u>]	76.0	<u>f 128</u>
		AI	TACHMENT D			
		•	Page 2 of 2			
		RAD	IONUCLIDE MIX	2		
		•	TABLE 2.2-2b			
	BV-2 R	ADIONUCLIDI	E MIX FOR GASE	EOUS EFFLUI	ENTS	
			(Ci/yr)	•		
			()			
	SLCRS	SLCRS				
	UNFILTERED	FILTERED	TURBINE			•
	PATHWAY	PATHWAY	BUILDING VENT	GASEOUS	WASTE/PROCES	<u>s vent</u>
-	Long Term, And	· ·				•
		AUXILIARY	TURBINE	MAIN	CONTAINMENT	GASEOUS
	CONTAINMENT	BUILDING	BUILDING	CONDENSER/	VACUUM	WASTE
NUCLIDE ⁽²⁾		VENTILATION	VENTILATION	AIR EJECTOR		SYSTEM
•	Short Term	Long Term	Long Term	Long Term	Long Term	Short Term
•	Unore Lorm	Long Lonn	Long roum	Long Iomi	Long Lonn	SHOLE LOUIN
Kr-83m	4.0E-05	4.2E-01	3.9E-05	2.7E-01	3.7E-04	0.0
Kr-85m	1.4E-02	1.9E+00	1.7E-04	1.2E+00	3.9E-03	1.2E-02
Kr-85	6.1E+01	2.5E+00	2.3E-04	1.6E+00	7.2E-01	2.3E+02
Kr-87	5.3E-06	1.3E+00	1.1E-04	8.2E-01	7.8E-04	0.0
Kr-88	4.1E-03	3.8E+00	3.5E-04	2.4E+00	5.0E-03	0.0
Kr-89	0.0	1.2E-01	1.1E-05	7.7E-02	3.1E-06	0.0
Xe-131m	7.2E-01	1.3E-01	1.2E-05	8.0E-02	1.3E-02	8.3E-01
Xe-133m	7.6E-01	8.9E-01	8.1E-05	5.6E-01	2.2E-02	0.0
Xe-133	8.4E+01	3.6E+01	3.4E-03	2.3E+01	1.9E-00	8.2E+00
Xe-135m	0.0	3.2É-01	2.9E-05	2.0E-01	4.4E-05	0.0
Xe-135	2.4E-01	4.5E+00	4.2E-04	2.8E+00	1.9E-02	0.0
Xe-137	0.0	2.1E-01	2.1E-05	1.3E-01	6.3E-06	0.0
Xe-138	0.0	1.1E+00	9.7E-05	6.6E-01	1.2E-04	0.0
I-131 I-132	2.7E-05 0.0	4.6E-03 0.0	6.5E-04 0.0	2.1E-02 0.0	4.7E-04 2.5E-06	0.0 0.0
I-132 I-133	0.0 ▲ 2.6E-06	6.7E-03	0.0 8.7E-04	3.0E-02	2.5E-06 8.4E-05	0.0
I-133 I-134	2.0E-00 · 0.0	0.0	8.7E-04 0.0	0.0 0.0	4.7E-05	0.0
I-134 I-135	0.0	0.0 ·	0.0	0.0	4.7E-07 1.4E-05	0.0
Co-58	0.0 7.5E-02	6.0E-04	0.0	0.0	1.6E-05	0.0
Co-58 Co-60	7.5E-02 3.4E-02	2.7E-04	0.0	0.0	7.4E-06	0.0
C0-00 Mn-54	3.4E-02 2.2E-02	2.7E-04 1.8E-04	0.0	0.0	4.9E-06	0.0
Fe-59	7.5E-02	6.0E-04	0.0	0.0	4.9E-00 1.6E-06	. 0.0
Sr-89 ***	1.7E-03	1.3E-05	0.0	0.0	3.7E-07	0.0
Sr-90	3.0E-04	2.0E-06	0.0	0.0	6.6E-08	0.0
Cs-134	2.2E-02	1.8E-04	0.0	0.0	4.9E-06	0.0
Cs-134 Cs-137	3.8E-02	3.0E-04	0.0	0.0	4.92-00 8.4E-06	0.0
C-14	1.0E+02	0.0	0.0	0.0	0.0	7.0E+00
Ar-41	2.5E+01	0.0	0.0	0.0	0.0	0.0

Containment can be purged via VV-2 (SLCRS Unfiltered Pathway), CV-2 (SLCRS Filtered Pathway), or PV-1/2 (Gaseous Waste/Process Vent)
 Source Term from BVPS-2UFSAR Table 11.3-2^(3.1.1.3)
 See Section 8.1.1.1

÷

			DIS	TANCE	S OF LI	IMITING M		UM INDI ANNUAI	E 2.2-3 IVIDUAL L X/Q VA ters)		RS TO R	ELEASE	POINTS				ODCM: G/	Tide
.• :	DOV	VNWIND	SITE	BOUNI	DARY*	VEGET		MILI	K COW	MILK	GOAT	MEAT A	NIMAL	RESID	ENT		GASEOUS EFFLUENTS	• • •
-	SE	CTOR	GRC	UND	ELEV	GROUND	ELEV	GROUN	ND ELEV	GROUND	ELEV	GROUN	D ELEV	GROUND	ELEV		SE	•
			(1)	(2)			•		-	· · 、		• . •	. `		· · · ·		臣	
	NNE		670 535	579 792	413 632	2,623 2,740	2,423 2,461			4,651 6,276	4,418 6,033	4,152 2,848	3,919 2,605	2,527 2,639	2,295 2,461	· · · I	UENT	
	NE ENE		490 490	442 448	327 394	724 1,674	901 1,658	7,741.	7,526	20,760 6,824	20,545 6,671	7,741	7,526	708 708	790 1,562	DISTANCES	S	
	E ESE	• v	545 575	546 607	551	1,979 1,577	1,922 1,619	7,065	6,998	4,265 2,865	4,200 2,899	4,265 1,577	4,200 1,619	756	1,922 1,650	AT		
	SE SSE		575 655	701 762	815	1,835 1,738	1,961 1,933	5,729 5,053	5,848 5,244	5,729 9,977	5,848 10,166	3,299 1,770	3,420 1,964	1,835 1,432	1,961 1,628	Page TO		
	S	• •	. 850	887	1,054	3,138	3,372	3,347	3,539			2,253	2,487	2,189	2,423	HMENT 1 of 1 RELEAS		
	SSW SW WSW		975 1,435 595	1,064 1,439 561	1,226 1,574 660	2,317 2,221 2,301	2,560 2,439 2,463	3,347 5,182	3,590 5,341	5,616 2,993 	5,859 3,210	2,317 2,414 2,446	2,560 2,632 2,608	1,223 2,221 2,301	1,466 2,439 2,463	HMENT E : 1 of 1 RELEASE POINTS		•
	W	••••••	685	640	681	3,556	3,635	5,118	5,195			4,088	4,166	3,556	3,635	NTS	·~	
	WNW NW NNW		810 655 645	701 567 558	676 482 420	3,605 1,464 1,464	3,590 1,415 1,285	4,538	4,521	22,529 10,944 15,450	22,507 10,832 15,262	3,605 4,570 3,959	3,590 4,461 3,774	3,605 1,432 1,143	3,590 1,383 1,253		Revision: 1	Unit:
*	' Distar					red from the V-1 Coolin	e center j			BV-1 and B	V-2 Cont	ainment B	uildings.	Distances f	or		Page	
		er release		urcu me	-		5 10	. 1.000	: .	in abbueno.			la reicase	is appread			Number	l Of Use: n-Field Reference
		2 and CB-1, CV-1,		V-2, DV	V-2, WV	-2	· · · · · · · · · · · · · · · · · · ·			i i i i i i i i i i i i i i i i i i i		-					102 J	Refer

.

Manual and

وتصحد مراجرة والمتواطح والأ

ي جيوني ۽ ^يري ۽ ايري ا

-		(IDENTI		VALU	AND CV- ES FOR CO CHMENT	2 ANNU ONTINU 'E, TAB	IOUS RI	ERAGI ELEAS 3), ANI	ES, SPI	ECIAL	DISTA		CATION	٩S				ODCM: GASEOUS	Пис
		INE	IVIDU	AL REC	EPTORS			I	DISTAN	ICES T	O THE	CONTR	OL LOO	CATION	I, IN M	ILES		D U U	ea
DOWN- WIND SECTOR	SITE BOUND- ARY	VEGE- TABLE GARDEN		MILK GOAT	MEAT ANIMAL	RESI- DENCE	0- 0.5	0.5- 1.0		⁻ 1.5- 2.0	2.0- 2.5	2.5- 3.0	3.0- 3.5	3.5- 4.0	4.0- 4.5	4.5- 5.0		S EFFLUENTS	Beaver Valley
N NNE NE ENE	125.0 50.2 102.0 85.8	12.80 6.92 47.40 12.50	 1.200 	5.360 2.040 0.265 0.124	6.27 6.42 1.20	13.50 7.16 49.10 42.20	233.0 148.0 120.0 103.0	39.5 26.8 21.6 18.4	18.70 10.80 11.60 9.55	11.80 6.62 6.99 5.70	7.68 4.60 4.81 4.14	5.82 3.44 3.55 3.04	4.240 2.690 2.370 2.340	3.480 2.190 1.910 1.880	2.660 1.830 1.450 1.260	2.280 1.560 1.230 1.060	A' 0-5 MILE DI	TIS	ey Power
E ESE SE SSE	54.5 31.1 27.8 24.1	6.16 6.92 6.70 6.68	0.807 0.994 1.030	1.910 3.010 0.994 0.372	1.91 6.92 2.74 6.50	32.60 6.92 6.70 9.01	89.5 59.1 65.9 67.2	15.7 10.5 12.0 12.0	6.08 5.16 5.89 5.46	3.65 3.10 3.54 3.30	2.49 1.95 2.41 1.91	1.83 1.43 1.77 1.41	1.300 1.020 1.160 0.997	1.040 0.815 0.931 0.803	0.859 0.612 0.768 0.665	0.726 0.517 0.649 0.563	ATTACHMENT F Page 1 of 7 MILE DISPERSION PARAMETERS		r Station
S SSW SW WSW	27.5 23.8 22.3 163.0	3.40 6.31 13.90 19.30	3.090 3.700 5.720	 1.740 9.050 	5.57 6.31 12.30 17.70	5.81 19.30 13.90 19.30	99.9 110.0 160.0 283.0	17.5 19.9 29.2 49.8	6.77 7.83 16.10 23.50	4.11 4.80 9.94 14.60	2.84 3.33 5.85 10.30	2.10 2.48 4.37 7.72	1.490 1.940 3.430 5.690	1.200 1.580 2.790 4.650	0.999 1.190 2.110 3.620	0.848 1.020 1.800 3.090	T F ARAMETER	-	
W WNW NW NNW	278.0 487.0 924.0 302.0	15.70 40.70 194.00 63.00	9.540 30.100 	1.810 8.660 1.720	13.00 40.70 40.50 15.40	15.70 40.70 200.00 92.30	615.0 1290.0 1710.0 547.0	103.0 203.0 262.0 86.4	49.00 92.10 123.00 40.80	31.00 59.20 79.80 26.20	15.40 40.60 55.00 17.60	11.70 31.20 42.30 13.50	9.320 25.000 34.000 10.100	7.660 20.700 28.200 8.350	19.400	5.550 12.200 16.700 5.660	Š		Procedure Num 1/
																		In-Field Reference Page Number: 78 of 128	lumber: 1/2-ODC-2.02

ĩ.

1	• ··	(IDENT		Q VALI	1 AND VV JES FOR (ACHMEN	CONTIN TE, TA	UOUS R	/ERAGE ELEASE 3), AND	S, SPE	CIAL D	ISTAN		ATION	'S				ODCM: GA:	Tide:
•	•					4	· · ·			2.2		~ · · · · · · ·				<i></i>		GASEOUS	
2 12 11				AL REC	EPTORS		<u> </u>	<u>DI</u>	STANC	ES TO	THE C	ONTRO		ATION,		. <u>ES</u>			
DOWN-	SITE	VEGE-	11 - 11 1	·	. '	•••	• • • •	· · · ·		· - ·			•		2 T 1			H	,
WIND SECTOR	BOUND- ARY	TABLE GARDEN		MILK GOAT	MEAT ANIMAL	RESI- DENCE	0- 0.5	0.5- 1.0	1.0- 1.5	1.5- 2.0	2.0- 2.5	2.5- 3.0	3.0- 3.5	3.5- 4.0	4.0- 4.5	4.5- 5.0		EFFLUENTS	•
N NNE NE ENE	152.0 62.3 132.0 110.0	15.00 7.66 57.90 13.60	 1.240	5.980 2.150 0.269 1.270	7.06 7.08 1.24	15.90 7.95 60.20 50.40	276.0 189.0 156.0 135.0	49.9 32.0 24.8 20.6	22.70 12.20 12.70 10.20	13.70 7.31 7.51 6.01	8.75 4.99 5.09 4.31	6.52 3.69 3.73 3.14	4.69 2.87 2.47 2.41	3.810 2.320 1.980 1.930	2.900 1.920 1.500 1.290	2.470 1.630 1.270 1.080	0-5 MILE]	NTS	
E ESE SE SSE	67.8 38.0 33.3 29.1	6.66 7.64 7.27 7.41	0.828 1.030 1.080	1.990 3.200 1.030 0.382	1.99 7.64 2.88 7.19	38.80 7.64 7.27 10.10	116.0 76.7 86.2 87.0	17.7 11.9 13.5 13.7	6.57 5.59 6.37 5.98	3.86 3.29 3.75 3.53	2.61 2.05 2.53 2.02	1.90 1.49 1.84 1.48	1.34 1.05 1.20 1.04	1.070 0.842 0.960 0.833	0.883 0.630 0.790 0.688	0.774 0.531 0.666 0.531	ATTACHMENT Page 2 of 7 DISPERSION PA		
S SSW SW WSW	32.8 28.7 26.2 201.0	3.65 7.08 15.70 22.40	3.300 4.040 6.230	1.850 9.980	6.10 7.08 13.80 20.40	6.38 22.90 15.70 22.40	127.0 140.0 204.0 347.0	20.3 23.6 34.8 61.3	7.56 8.87 18.40 27.70	4.48 5.28 11.40 16.60	3.04 3.60 6.38 11.40	2.23 2.66 4.71 8.49	1.57 2.07 3.66 6.19	1.260 1.670 2.960 5.020	1.050 1.260 2.230 3.880	0.885 1.070 1.900 3.300	ATTACHMENT F Page 2 of 7 MILE DISPERSION PARAMETERS		
W WNW NW		202.00 ?	10.600 35.000	1.920 9.520			715.0 1410.0 1820.0	132.0 269.0 350.0	60.30 120.00 164.00	100.00	17.70 48.50 66.60	13.20 36.40 50.10	10.40 28.70 39.50	32.300	7.060 15.900 21.900	18.800	S	Revision:	Unit: 1/2
NNW ·	345.0	83.40	 	1.840		121.00	601.0	114.0	52.80	32.20	21.00	15.80	11.60	9.460	7.360	6.310		Page Number: 79 of 128	Level Of Use: In-Field Reference

		·			ACHMEN		BLE 2.2- (1E-7 se	c/m ³)	SELEC						I, IN MI	ILES		GASEOUS	beaver
DOWN- WIND SECTOR	SITE BOUND- ARY	VEGE- TABLE GARDEN		MILK GOAT	MEAT ANIMAL	REŜI- DENCE	0- 0.5	0.5- 1.0		1.5- 2.0	2.0- 2.5	2.5- 3.0	3.0- 3.5	3.5- 4.0	4.0- 4.5	4.5- 5.0		S EFFLUENTS	ver valley
N NNE NE ENE	0.0082 0.0280 0.0110 0.0110	6.720 6.690 .074 9.090	 1.610 	1.910 1.430 0.350 1.770	2.27 6.14 1.61	6.790 6.890 0.055 0.525	0.0289 0.0175 0.0069 0.0135	23.1000 14.5000 0.1160 0.3310		5.32 5.47 7.10 6.02	2.56 3.27 5.38 4.75	1.91 2.69 3.68 3.22	1.480 1.770 2.880 2.620	1.200 1.430 2.090 2.030	0.996 1.290 1.880 1.710	0.846 1.100 1.570 1.100	A-5 MILE D	TIS	ey Power
E ESE SE SSE	0.0360 0.0420 0.0750 0.2060	8.300 11.600 7.890 7.390	1.240 1.230 1.160	2.870 4.570 1.230 0.357	2.87 11.60 3.05 7.20	8.300 11.200 7.890 9.770	0.0124 0.0208 0.4770 0.3030			6.20 4.78 4.45 4.06	3.67 3.00 2.79 2.58	2.83 2.20 2.05 1.89	2.190 1.360 1.460 1.170	1.730 1.160 1.180 0.937	1.280 0.830 0.811 0.646	1.200 0.737 0.686 0.546	ATTACHMENT F Page 3 of 7 MILE DISPERSION PARAMETERS		r Station
S SSW SW WSW,	5.740 7.640 6.500 0.126	3.760 3.610 3.900 4.350	3.490 2.140 1.420	 0.872 2.560 	6.06 3.61 3.47 3.98	6.310 5.820 3.900 4.350	0.7960 26.1000 36.1000 0.3870	8.5100 9.1000 15.9000 17.8000	8.4900 4.0300 4.9300 4.9000	4.98 3.11 3.12 3.53	3.37 2.11 1.77 2.36	2.47 1.56 1.57 1.64	1.380 1.030 1.201 1.460	1.110 0.834 1.060 1.210	0.774 0.807 1.150 0.920	0.655 0.684 0.977 0.781	T F ARAMETER		
W. WNW NW NNW	0.029 0.033 0.007 0.008	2.490 2.530 0.074 6.460 Q value at	0.764 1.780 	0.163 0.305 · 0.224	2.02 2.53 1.67 1.81	2.490 2.530 0.073 6.590	0.0147 0.0202 0.0084 0.0135	0.0549 0.0650 6.7800	5.0200	3.68 3.07 3.66 2.96	2.50 2.50 2.30 1.93	1.84 1.84 1.69 1.49	0.741 1.110 1.210 1.050	1.120 0.686 0.903 0.849	0.851 0.791 0.804 0.705	0.795 0.731 0.683 0.599	6	Unit: Level Of Use: 1/2 In-Field Reference Revision: Page Number: 1 80 of 128	

·

•

 \sim and \sim

TABLE 2.2-7	- <u>····</u>
TV-2 ANNUAL AVERAGE, GROUN	
FOR CONTINUOUS RELEASES, S	PECIAL DISTANCES

s es se

لممير. الم

ODCM:

GASEOUS EFFLUENTS

ATTACHMENT F

. . . .

8.880 6.950 5.980

٠

Title

.

Beaver

Valley Power Station

Procedure Number:

1/2-ODC-2.02

Unit:

5

Level Of Use: In-Field Reference Page Number:

81 of 128

Revision:

:

• 1

		(IDENT	TIFIED	IN ÅTT.	ACHMEN		BLE 2.2- (1E-7 se		SELEC	TED C	ONTRO	DL LOC :	ATION	IS	·	
		IND	IVIDU	AL REC	EPTORS			DI	STANC	<u>ES TO</u>	THE C	ONTRO	DL LOC	ATION,		.ES
															· · ·	•
DOWN- WIND SECTOR	SITE BOUND- ARY	VEGE- TABLE GARDEN		MILK GOAT	MEAT ANIMAL	REŜI- DENCE	0- 0.5	0.5- 1.0	1.0- 1.5	1.5- 2.0	2.0- 2.5	2.5- 3.0	3.0- 3.5	3.5- 4.0	4.0- 4.5	4.5- 5.0
N	105.0	14.00	••	5.740	6.74	14.80	244.0	42.6	20.50	12.70	8.18	6.15	4.45	3.640	2.770	
NNE NE	102.0 96.6	7.37 51.90	1.230	2.130 0.268	6.83 1.23	7.64 53.80	161.0 132.0	28.8 23.0	11.40 12.10	6.94 7.24	4.79 4.95	3.56 3.64	2.78 2.42	2.250 1.950		1.590
ENE	84.1	13.20		1.280	1.23	46.30	115.0	19.4	9.89	5.85	4.23	3.09	2.38	1.900		1.230
					·							••••			1	
Е	60.7	6.49	· .829	1.980	1.98	35.70	99.2	16.6	6.32	3.75	2.55	1.87	1.32	1.060	0.871	0.735
ESE	37.1	7.25	••	3.100	7.25	7.25	65.8	11.1	5.36	3.19	2.00	1.46	1.03	0.829	0.621	0.524
SE	41.8	7.06	1.020	1.020	2.85	7.06	73.5	12.6	6.12	3.64	2.47	1.81	1.18	0.945	0.779	0.658
SSE	34.0	7.16	1.070	0.384	6.96	9.69	74.2	12.7	5.71	3.41	1.97	1.45	1.02	0.818	0.676	0.572
S	32.7	3.64	3.310		6.00	6.27	109.0	18.6	7.13	4.29	2.94	2.17	1.53	1.230	. 1.020	0.866
SSW	29.7	6.73	3.890		6.73	20.90	120.0	21.3	8.31	5.03	3.46	2.57	2.00	1.620		1.040
SW	24.1	14.80		9.550	13.10	14.80	174.0	31.2	17.20	10.40	6.10	4.54	3.54	2.870		1.850
WSW	159.0	20.80	6.010	**	19.10	20.80	301.0	53.6	25.30	15.60	10.80	8.09	5.93	4.830	3.750	3.200
																•
W	264.0	16.90	10.100	* •	13.90	16.90	636.0	111.0	53.90	33.50	16.50	12.40	9.82	8.040	6.760	5.790
ŴNW	404.0	44.50	32.500	1.870	44.50	44.50	1310.0	218.0	104.00		44.20	33.60	26.70		15.000	
NW	735.0	216.00		9.100	43.90	222.00	1720.0	279.0	140.00	88.80	60.30	45.90	36.60	30.100	20.600	17.700

• • • • • • • •

1_1

NNW

247.0

71.00

--

1.820

17.00

.

99.40

557.0

.

924.0

45.90 28.90

19.20 14.60

10.80

.

Beaver Valley Power Station	Procedure Number:				
	Unit	1/2-ODC-2.02 Level Of Use:			
	1/2	In-Field Reference			
DCM: GASEOUS EFFLUENTS	Revision:	Page Number:			
ATTACHMENT F		82 of 128			
Page 5 of 7					
0-5 MILE DISPERSION PARAMETH	ERS				
TABLE 2.2-8					
DV-2 ANNUAL AVERAGE, GROUND LEVEL FOR CONTINUOUS RELEASES, SPECIAL (IDENTIFIED IN ATTACHMENT E, TABLE 2.2-3), AND SELE (1E-7 sec/m ³)	DISTANCE	S			
Same as Table 2.2-4		-			
•					
		· ·			
	•				
• •					
· +.		:			
· · ·					
•					
	•	•			
	·	-			
•		,			

;

:

.

.

. . .

· · · · ·

Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.02				
itle:	Unit:	Level Of Use:			
	1/2	In-Field Reference			
DDCM: GASEOUS EFFLUENTS	Revision:	Page Number: 83 of 128			
ATTACHMENT F Page 6 of 7 0-5 MILE DISPERSION PARAMETI	ERS	105 01 120			
TABLE 2.2-9					
WV-2 ANNUAL AVERAGE, GROUND LEVEI FOR CONTINUOUS RELEASES, SPECIAL (IDENTIFIED IN ATTACHMENT E, TABLE 2.2-3), AND SELE (1E-7 sec/m ³)	DISTANCE	5			
Same as Table 2.2-4					
		· .			
· ·					
		:			
· ·		:			
·		:			
		· · · ·			
· •	*				
* -t+		•			
		· .			
	·				
		-			
	•				

.

•

Beaver Valley Power Station	Procedure Nu	mber: /2-ODC-2.02
Tide:	Unit:	Level Of Use:
	1/2	In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 84 of 128
ATTACHMENT F		
Page 7 of 7		
0-5 MILE DISPERSION PARAMETE	ERS	
TABLE 2.2-10		
CB-2 ANNUAL ÀVERAGE, GROUND LEVEL,		
FOR CONTINUOUS RELEASES, SPECIAL I	DISTANCES	
(IDENTIFIED IN ATTACHMENT E, TABLE 2.2-3), AND SELEC	CIEDCON	I RUL LUCATIONS
Same as Table 2.2-7		
· · · · · · · · · · · · · · · · · · ·		
		·
•		
· · · .		
· · ·		
		-

LL

Rea	ver Valley Pov	ver Station	Procedure Nu	
				/2-ODC-2.02
Title:	ás a ,		Unit:	Level Of Use: In-Field Referen
			<u>1/2</u> Revision:	Page Number:
ODCM: GASEOU	JS EFFLUENTS		1	85 of 128
	· `;	ATTACHMENT C		
		: Page 1 of 2		
•	NOBLE GAS DOSE		OSE PARAMETER	S
		· · · · · · · · · · · · · · · · · · ·		
		TABLE 2.2-11		
	DOSE FACTORS F	FOR NOBLE GASES	S AND DAUGHTER	S
	Ki	Li	Mi	Ni
	TOTAL BODY	SKIN DOSE	GAMMA AIR	BETA AIR DO
NUCLIDE ⁽¹⁾	DOSE FACTOR	FACTOR	DOSE FACTOR	FACTOR
· · · · ·	mrem/yr	mrem/yr	mrad/yr	mrad/yr
	Per	Per	Per	Per
	uCi/m ³	uCi/m ³	uCi/m ³	uCi/m ³
Kr-83m	7.56E-02	·	1.93E+01	2.88E+02
Kr-85m	:1.17E+03	1.46E+03	1.23E+03	1.97E+03
Kr-85	1.61E+01	1.34E+03	1.72E+01	1.95E+03
Kr-87	5.92E+03	9.73E+03	6.17E+03	1.03E+04
Kr-88	1.47E+04	2.37E+03	1.52E+04	2.93E+03
Kr-89	1.66E+04	1.01E+04	1.73E+04	1.06E+04
Kr-90	1.56E+04	7.29E+03	1.63E+04	7.83E+03
Xe-131m	9.15E+01	4.76E+02	1.56E+02	1.11E+03
Xe-133m	2.51E+02	9.94E+02	3.27E+02	1.48E+03
Xe-133	2.94E+02	3.06E+02	3.53E+02	1.05E+03
Xe-135	3.12E+03	7.11E+02	3.36E+03	7.39E+02
Xe-135	1.81E+03	1.86E+03	1.92E+03	2.46E+03
Xe-133 Xe-137	1.42E+03	1.22E+04	1.51E+03	1.27E+04
1		4.13E+03		4.75E+03
Xe-138 Ar-41	8.83E+03		9.21E+03 9.30E+03	4.75E+03 3.28E+03
AT-41	8.84E+03	2.69E+03		1 - 1 - 1 H
			u territa de la composición de la compo	
(1) The listed dos $\vec{\tau}$	se factors are for radio		detected in gaseous e	
1	·	a shekara a kata a shekara shekara shekara shekara		•
:				
1				
· ·				-
1				<u>.</u>

• •• •

Bea	ver Valley Pow		Procedure Number: 1/2-ODC-2.02				
lic:	_		Unit: 1/2	Level Of Use: In-Field Reference			
DCM: GASEOU	C EEEI LIENTO		Revision:	Page Number:			
	S EFFLUENIS		1	86 of 128			
		ATTACHMENT G					
		Page 2 of 2					
	NOBLE GAS DOSE	FACTORS AND DO	DSE PARAMETERS	5 ·			
		TABLE 2.2-12					
	DOSE PARAMETE	ERS FOR FINITE EL	EVATED PLUMES				
	V _i ⁽¹⁾	B _i ^{(1), (2)}	M _i ⁽³⁾	B _i ⁽³⁾			
	TOTAL BODY	GAMMA AIR	TOTAL BODY	GAMMA AIR			
NUCLIDE ⁽⁴⁾	DOSE FACTOR	DOSE FACTOR	DOSE FACTOR	DOSE FACTOR			
	mrem/yr	mrad/yr	mrem/yr	mrad/yr			
	Per	Per	Per	Per			
	uCi/sec	uCi/sec	uCi/sec	uCi/sec			
Kr-83m	3.19E-10	1.75E-8	4.58E-8	3.96E-5			
Kr-85m	7.81E-5	1.16E-4	4.70E-4	7.06E-4			
Kr-85	1.55E-6	2.35E-6	5.54E-6	8.40E-6			
Kr-87	5.13E-4	7.74E-4	1.45E-3	2.19E-3			
Kr-88	1.39E-3	2.09E-3	4.09E-3	6.16E-3			
Kr-89	7.99E-4	1.20E-3	1.25E-3	1.88E-3			
Xe-131m	1.64E-5	2.47E-5	1.67E-4	3.09E-4			
Xe-133m	1.38E-5	2.11E-5	1.32E-4	2.61E-4			
Xe-133	1.05E-5	1.56E-4	1.54E-4	2.76E-4			
Xe-135m	2.41E-4	3.66E-4	6.21E-4	9.50E-4			
Xe-135	1.41E-4	2.12E-4	6.96E-4	1.05E-3			
Xe-135	6.00E-5	9.05E-5	9.66E-5	1.46E-4			
Xe-137	8.11E-4	1.22E-3	2.22E-3	3.34E-3			
	0.11J-T	1.444.3	J	J.JTLJJ			

⁽¹⁾ V_i and B_i values used to implement Modes 1, 2, and 3 of Section 2.2.1 (10CFR20)

⁽²⁾ B_i values used to implement Modes 1, 2, 3, and 4 of Section 2.3.1 (10CFR50)

⁽³⁾ V_i and B_i values to implement Mode 4 of Section 2.2.1 (10CFR20) and to implement monitor setpoint determinations of Section 2.1.2 and 2.1.4

⁽⁴⁾ The listed dose parameters are for radionuclides that may be detected in gaseous effluents.

	Beaver	v alle	y 10		Jiail	<u>лн</u>		<u> </u>		1/2-ODC	
Title:								U	nit: 1/2	Level Of I	Use: eld Referenc
ODCM: GAS	SEOUS EFF	LUENT	S					R	evision:	Page Num	
										<u>8</u>	7 of 128
					ACHM		1				
		•	OPC		Page 1 o		ETERS	•			
			UNU		J2E. L1	ALCANAI	CICKS				
	8	•			• .	•				1	
j											
ļ	· . ·					•		· . ·			
		• •	۰.				•			•	
					Table 2.2-1	3					
		;		IS TOP A CRI	ild por the	BLAVIN TILL	AT SITE			2	•
the set of a	· • • .		ir	(area/	'yr yer 1Ci/	cu neter)					-
and the start of the	* .			·• 1			· · · ·			. i., .	• •
			• •	1			• 70 - 97			1	· · · · · ,
	•••	Nuclide -	Boas	Liver	T. Joir	Thyroid	Kidney	lag	GI-LLI	·	· .
	······	1 8-5 2 P-32	0.001+00 2.601+06		1.12E+03 9.88E+04	1.125+03 0.002+00	1.128+03	1.12E+03 0.00E+00	1.121+03		
		3 Cz-51	0.001+00	0.001+00	1.541+02	8.551+01	2.431+01	1.701+04	1.031+03		
and the second second	. ,	(Ha-54 5 Fe-59	0.001+00 2.071+0{	4.291+04 3.341+84	9.518+03 1.678+84		1.008+04 0.008+00	1.58X+06 1.27X+06	2.29I+04 7.07I+04		
the first of the second s		6 Co-57	0.00 1 +00	9.032+02	1.07 8 +03	0.001100.0	0.001100.0	5.078+05	1,321+04	•. •.	
47.2 ·		7 Co-58 8 Co-60	0.00X+00 0.00X+00		3.16E+03 2.26E+04	0_00E+00 0_00E+00	D0+300.0 00+300.0	1.11E+06 7.07E+05			:
	•	9 Ia-65 10 Ib-86	1.258+04		7.43E+04	0.00E+00 0.00E+00	7.14E+04 -	9.951+05 0.001+00	1.831+04		
•				2		, : ⁻		:		; * •	*. * :
		11 Sr-89 12 Sr-90	5.991+05	0.001+60	. 1.728+04 6.448+06	0.00I+00 0.00I+00	0.001+00 9.001+00 9.001+00	2.16I+06 1.48I+07	3,431+05	$\mathbb{S}^{n} \to \mathbb{Z}^{n}$	
1	* *	13 T-91. 14 Tr-95	1.901+05	0.001+00 4.181+04	- 3.70X+04	0.00I+00	-5.961+04	2.238+06	6.111+04	· · ·	· · · · · · · · · · · · · · · · · · ·
	1	15 T b-95		9.18 E +03			8.628+03				
	• ·	16 Nb-97 17 No-99	0.001100	1.721+02	4.263+01	0.001100.0	3.921+02	1.351+05	2.78X+04 1.27X+05		
	•	18 Tc-99m 19 Tu-103	1.78I-03 2.79I+03	3.45E-03 0.00E+00	5.TTE-02 1.07E+03	0.00E+00 0.00E+00	5.07£-02 7.03£+03	9.518+02 6.828+05	4.818+03 4.488+04	• .	1.1.1
		20 Ia-106	1.361+05	0.00I+00	1.691+04	0.001+00	1.8(1+05	1.431+07	4.291+05		27 97. T
		21 Ag-110n 22 Sb-124	1.691+04	1.141404	9.141+03	0.001+00			1.00I+05 . 1.64I+05	et, af j	
Į		23 55-125	9.84I+04	7.591+02	2.071+04	\$.10E+01	0.001+00	2.328+95	4.031+04	• • • • • •	•
		24 Ie-127n 25 Te-129n			3.028+03 3.048+03				7.148+04 1.828+05		
* ** *		26 I-131							2.841+03		· 、
1		27 I-133 28 Ce-134			7.70 1 +03 2.251+05	3.851+05 0.001+00	3.388+04 3.308+05	0_00E+00 1.21E+05	5.482+03 3.852+03		
	•	29 Ca-136 30 Ca-137	6.518+01	1.718+05	1,161+05				4.181+03 3.628+03	·	•
1		J1 B4-140							1.028+05		• •
1		32 La-140	6.448+02	2.251+02	7.558+01	0.001100	0.001+00	1.831+05	2.26E+05		
· ·		33 Ge-141 "34 Ge-114	S.TTX+05	2.128+06	3.818+05	0.00 1 +00	1.178+06	1.201+07	5 5.861+04 3.891+05	• ·	* .
	· · · ·	Calculate	nd per ODCH	equation 2.	.2-13 (C ¹) (.***	. •	• •	• 4	·
			-						· ·	• • •	• • • • • •
}					· · · ·		· .	· .	. • •	• • •	••••
·	6.100		, •		• • •			•	•	- .	•
						; •··	3	•••••			

٠

; . تر

Beaver Va	lley Power St	tation	Procedure Numb	кт. 2-ODC-2.02
Title: DDCM: GASEOUS EFFLU			Unit: 1/2	Level Of Use: In-Field Reference Page Number: 88 of 128
	Pa	CHMENT I ge 1 of 1 ASEOUS RELEA	SE	
	ТА	BLE 2.3-1		
	EOUS RELEASE FE			ENTS FOR
RELEASE POINT	RELEASE <u>MODE 1</u>	RELEASE MODE 2	RELEASE MODE 3	RELEASE MODE 4
RP 1; VV-1, Auxiliary Building Vent ⁽¹⁾	Aux. Bldg. Ventilation	Containment Purge ⁽³⁾	Same As Mode	I Same As Mode 1
RP 2; CV-1, Rx Containment/SLCRS Vent ⁽¹⁾	Leakage Collection Exhaust	Same As Mode 1	Same As Mode and Containmen Purge ⁽³⁾	
RP 3; PV-1/2, Gaseous Waste/Process Vent ⁽²⁾	Main Cond. Air Ejector, Waste Gas, Containment Vacuum	Same As Mode 1	Same As Mode	1 Same As Mode 1 and Containment Purge
RP 4; VV-2 SLCRS Unfiltered Pathway ⁽¹⁾	Contiguous Areas	Containment Purge ⁽³⁾	Same As Mode	1 Same As Mode 1
RP 5; CV-2, SLCRS Filtered Pathway ⁽¹⁾	Aux. Bldg. Ventilation	Same As Mode 1	Same As Mode and Containmer Purge ⁽³⁾	
RP 6; CB-2, Condensate Polishing Bldg Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 7; WV-2, Waste Gas Storage Vault Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 8; DV-2, Decontamination Bldg Vent ⁽¹⁾	(4)	(4)	(4)	(4)
RP 9; TV-2, Turbine Bldg	(4)	(4)	(4)	(4)

(1) Continuous ground level meteorology is applicable
 (2) Continuous elevated meteorology is applicable
 (3) Mode established by purge from one unit, all other release points remain same as Mode 1
 (4) Not normally a radioactive release point

B	leaver Valle	ey Power S	Station		Procedure Nu	mber: 1/2-ODC-2.02	
Title:		<u> </u>			Unit:	Level Of Use:	
		ma			1/2 Revisioa:	In-Field Refere Page Number:	ence
JDCM: GASI	EOUS EFFLUEN	15			1	89_of 128	· ·
			ACHMENT	J			-
			age 1 of 19				
		P&I ORGA	N DOSE FA	CTORS			
		,					
			Table 2.3-2				
		B BAUNEC	FOR BLAVER VALLEY SIT	r			
		· · · ·	• <i>11 1</i>	•			•
	-		/yr per uCl/cu seter)	•	-		
		= Inhelation up = Adalt		•		•	
	Tuclide	Bone Liver	T. Jody Thyrold	Lidney	Long GI-LLI		
	1 8-3	0.001+00 1.261+03	1.262+03 1.262+03	1.268+03 1.2	68+03 1.268+03		
	2 2-32 3 Cr-51	1.321+06 7.711+04 0.001+00 0.001+00	5.01E+04 0.00E+00 1.00E+02 5.95E+01	.0.00E+00 0.0	01+00 8.641+04 41+04 3.321+03		
	4 Hz-54 5 Te-59	0.001+00 3.961+04 1.101+04 2.781+04		9.841+03 1.4	01+06 7.741+04 21+06 1.881+05		
	8 Co-57	0.001+00 6.921+02		· · · · · · · · · · · · · · · · · · ·	01+05 3.141+04		
	7 Co-58 8 Co-60	0.00E+00 1.58E+03	- 2.07E+03 : 0.00E+00	0.90E+00 9.2	8I+05 1.06I+05 7I+06 2.85I+05		;
	. 9 Za-6 5	0.001+00 1.151+04 3.241+04 1.031+05	4.651+04 0.001+00	6.901+04 8.6	41+05 5.348+04		
	10 Rb-85	0.001+00 1.351+05		- •	01+00 1.661+04		
	11 Sr-89 12 Sr-90	3.041+05 0.001+00 9.921+07 0.001+00	8.72X+03 0.00X+00 6.10X+05 0.00X+00	0.00E+00 9.6	01+06 3.501+05 01+06 7.221+05		
	13 T-9 1 14 Ir-9 5	1.071+05 3.441+04	1.24E+04 0.00I+00 2.33E+04 0.00I+00		01+06 3.858+05 78+08 1.508+05	£	ż
	15 Fb-95	1.418+04 7.828+03	4.21E+03 0.00E+00	· · · · · · · ·	51+05 1.041+05		
	16 85-97 17 Bo-99	2.228-01 5.628-02 0.008+00 1.218+02	2.058-02 0.008+00 2.308+01 0.008+00		0E+03 2.42E+02 2E+04 2.48E+05		
+	16 Tc-95s 19 Ru-103	1.03I-03 / 2.91I-03	3.701-02 0.001+00 6.581+02 0.001+00	4.421-02 7.0	41+02 4.161+03		-
	20 Iu-106	6.911+04 0.001+60	8.72E+03 0.00E+00	1.341+05 9.3	61+06 9.121+05	,	
	21 Ag-110		5.941+03 0.001+00				:
	22 So-124 23 So-125 24 To-127	5.341+01 5,951+02	1.24K+04 7.55K+01 1.26K+04 5.40K+01	0.00I+00 1.1	41+06 1.011+05		
	· • • • • • • • • • • • • • • • • • • •	1.261+04 5.771+03 9.761+03 4.671+03					
t.	26 1-131	2.521+04 - 3.581+04	2.051+04 1.191+07	6.131+04 0.0	01+00 8.281+03		
	27 I-133 28 Cs-134	3.731+05 8.481+05	4.521+03 2.151+06 7.281+05 0.001+00	2.871+05 9.1	16 I +04 1.04 I +04		•
•	29 Ca-138 30 Ca-137		* 1.101+05 0.001+00 *4.281+05 ** 0.001+00				
	52 La-140	3.441+02 - 1.741+02 1.891+04 - 1.351+04	4.581+81 0.001+00	8.60T+00 1.	361+05 4.581+05		
	33 Ce-141 34 Ce-141	3.431+06 1.431+06	1.641+05 0.001+00	8.481+05 7.	101+06 8.161+05		•
	Calcul	ated per ODCE equation 2	.3-22 -	•			
							:

ļ

The second se

;

....

E	Beaver Valley Power Station							Рго	cedure Nur 1	nber: /2-ODC-2.02
Title:										Level Of Use:
		,							1/2	In-Field Reference
		· · · · ·						- Rei	<u>112 —</u> rision:	Page Number:
ODCM: GAS	EOUS EFI	LUEN	ſS					. Rev	1 1	90 of 128
······	··				ACHI	AENTT 1				<u> </u>
		•			age 2 o					
			P&I	ORGA	N DOS	SE FAC	CTORS			
					Table 2.3-3	3				
				I VALUIS	POR BLIVER	VALLET SIT	I			•
				(area,	/yr per wCi,	(cu netar)				-
		Pathway = Age Group	Inhalation = feen	•						·
		Juclide	Bose	Liver	T. Body	Thyroid	Lidaoy	Lung	61-LLI	
				••						
		1 I-3 2 P-32	0.00 2+00 1.89 2+06	1.27 8+03 1.10 8+05	1.278+03 7.168+04	1.27I+03 0.00I+00	1.27X+03 0.00X+00	1.27E+03 9.00E+00	1.278+03 9.288+04	
		3 Ce-51	0.00E+00	0.001+00	1.351+02	7.501+01	3.07E+01		3.001+03	
		4 Ha-54	0.001+00		· 8, 402+03	0.001+00		1.982+06	6.68X+04	
		5 Te-59	1.598+04	3.701+04	1.431+04	0.001+00	0.00I+00	1.531+06	1.781+05	
		8 Co-57	0.001+00	9.442+02	9.201+02	0.00X+00	0.002+00	5.86X+05	3.148+04	
		7 Co-58		2.078+03		0.001+00	0.001+00	1.342+05	9.521+04	
		8 Ca-60	9.00X+00	1.518+04	-1.988+04	0.001100.0	. 00E+00	8.728+06	2.59E+05	
		9 Za-65	3.882+04	1.341+05	6.248+04	0.001100	8.642+04	1.248+08	4.661+04	
		10 15-86	9.00X+00	1.901+05	8,402+04	0.001+00	0.00E+00	9.00X+09	1.178+04	
•	• *	11 Sr-89	4.341+05	0.00E+00	1.251+04	0.001+00	0.001+00	Z.42E+08	3.71 8 +05	
		12 Sr-90 .	1.081+08	0.00X+00	6.68E+06		- 0.00X+00	1.658+07	7.65E+05	
		13 T-91	6.611+05	0.00X+00		0.001+00	0.00E+00	2.942+06	4.09E+05	•
		14 Zr-95 15 D -95	1.468+05		3.15E+04	0.00E+06 0.00E+00		2.698+06 7.518+05	1.498+05	
		13 FB-33	1.005104	1.031+04	5.662+03	V.VULTUU	1.008+04	1.318403	9.65 8 +04	
	•	18 86-97	3.142-01	7.768-02	2.648-02	0.001+00	9.12 E -02	3.931+03	2.17 8 +03	
		17 Xo-99	0.00E+00	1.691+02	3.228+01	0.00E+00	4.11 E +02	1.548+05	2.691+05	
-		18 Tc-99a			4.982-02				6.13 2 +03	
·	,	19 Ru-103 20 Ru-105	2.10E+03 9.84E+04		8.96X+02		7.431+03 1.901+05		1.09E+05 9.60E+05	
		PA 96.1AA	4.418TV3	4.40B100	1.618IV4	4.448144	********	7*A78.A1	4.448.44	
							2.502+04			
		22 50-124					0.001+00			
		23 55-125					· 0.001+00 :			
	•	24 Te-127m 25 Te-129m					5.191+04			
		26 [-131					8.40X+04		6.49I+03	
		27 I-133					3.591+04			
		28 Ca-134					3.75E+05			
		29 Ca-138 30 Ca-137			- 3.118+05		1.101+05 3.041+05			
			4.148.44	4.108.44						
		31 Ba-140					2.285+01			•
	·	32 La-140			8.26E+01					
	· ·	33 Ce-141			2.178+03					
		34 Ce-144 - 1	4.031106	Z.UZI+05	Z. 021+05	a'no1400	1.21X+06	1.341+07	8.64X+05	

Calculated per ODCH equation 2.3-22

•

.

...

Beaver	Valley Po			cedure Nui	1/2-ODC-2.02			
itle:								
						1/2	Level Of Use: In-Field	Reference
DDCM: GASEOUS EFF	LUENTS				Re	vision:	Page Number:	
						_1	<u> </u>	f 128
			CHMEN	ΓJ ·				-
	•	-	ge 3 of 19					
	P&I	ORGAN	DOSE F.	ACTORS				
•								
							1	
							•	
		Ta	ble 2.3-4					
		•••	R BRAVER VALLEY	\$1 7 7				
			ta const					
		(aren/yr	per wCi/cu mote	ar)				
	Pathway = Inhalation	•						
	Age Group = Child			ţ	•			
	Suclide Bone	Liver	I. Body Thyre	aid Lidney	Lang	GI-LLI	•	
•		•	•					
	1 E-3 0.001+00 2 P-32 2.60E+06		.128+03 1.1284 .888+04 0.4084		1.12 1+0 3 0.00 1+0 0	1.128+03		
	3 Cr-51 0.001+00	0.001+00 1	.54E+02 8.55E	01 2.438+01	1.708+04	-1.081+03		
	4 Ha-54 0.001+00 5 Te-59 2.071404		.511+03 0.001 .871+04 0.001		1.58I+06 1.27E+06	2.29I+04 7.07E+04		
• .		11-54 to 12		• • ;		-		
· · ·	6 Co-57 0.001+00 7 Co-58 0.001+00		.07E+03 0.00E .16E+03 0.00E		5.07I+05 1.11I+06	1.328+04 3.448+04	•	
-	8 Co-60 9.001+00	1.318+04 32	.261+04 0.001	00+100.0 00+00	7.071+06	9.621+04		
	9 Za-65 4.251+04 10 Kb-86 0.001+00		.031+04 0.001 .141+05 0.001			1.638+04 7.998+03		:
· ,		1+1111 +						
•	11 Sr-89 5.99I+05 12 Sr-90 1.01I+08		.721+04 0.001 .441+06 0.001		2.16E+06 1.48E+07	1.671+05		
	13 T-91 . 9.141+05	- 8.00E+00 2	.44I+04 0.60I	+00 0.00X+00	2.631+06	1.841+05		
•		· · · · · · · · · · · ·	.TOE+04 0.00E .55E+03 0.00E		2.23E+06 6.14E+05	8.11X+04 3.70X+04		•
· · · ·		a later of a			,			:
·			.605-02 0.005 .265+01 0.005		3.428+03 1.358+05	2.78£+04 1.27£+05		1
	18 Te-99a 👶 1.781-03	3.481-03 5	.TTE-02 0,00E	+00 5.073-02	9.51 1 +02	4.812+03		
	19 Ru-103 2.791+03 20 Ru-106 1.361+05		.07E+03 _ 0.00E .69E+04 _ 0.00E		6.628+05 1.438+07			-
			· · · · · ·					•
<i>,</i>			.14I+03 0.00I .00I+04 1.28I		5.48I+06 3.24I+06	1.00I+05 1.64I+05		
	23 55-125 9.848+04	7.591+02 2	.078+04 9.108	+01 0.001+00	2.321+06	4.03E+04		;
	24 Te-127n 2.491+04 25 Te-129n 1.921+04	²¹ 6.851+03 3	.028+03 8.078 .048+03 8.338	+03 5.038+04	1.481+06	1.828+05		
			i e a le jaño de		ы ў:	•		
1. 19 an			1.73E+04 1.62E 1.70E+03 3.85E					
·. ·	28 Ca-134 8.511+05	1.011+95 1	1.258+05 0.00E	+00 3.301+05	1.218+05	3.858+03		
			.161+05 0.001 .281+05 0.001			4.18X+03 3.62X+03		•
•		· · · · · · · · · · · · · · · · · · ·		• .`	. · · · ·			
1			1.331+03 0.001 1.558+01 0.001					1
	33 Ce-141 3.928+04	-1.95I+04	2.90X+03 : 0.00X	+00	5.441+05	5.661+84		
ŕ	34 Ce-144 6.778+05	2.121+05	3.61E+05 0.00I	+00 1.178+06		3.891+05		
	Calculated per ODCE							

Bea	ver Valle	ey Po	wer	Static	n		Proc	edure Nun	
itle:							Unit		/2-ODC-2.02
······								: 1/2	In-Field Reference
DOM GASTON		TO						ision:	Page Number:
DCM: GASEOU	S EFFLUEN	15						1	92 of 128
			A 77	CACHIN	CAPT I		I		<u> </u>
	•			Page 4 o					
		P&I	ORGA	NDOS	SE FAC	TORS			
•									L
				Table 2.3-	5				
			R VALUES	FOR BLAVER	VALLET SITE	!			
			(nren	/yr per uCi,	(cu mter)				•
	Pathwaw =	: Inhelation			• •				
		= Infant				·			
	Kuclide	Bone	Liver	T. Body	Thyrold	Ildney	Lung	GI-LLI	
	B4C1108			1. 0041		-	Next	41 941	
	1 2-3	6.001+00	8.472+02	6.47X+02	6.47E+02	6.47E+02	6.47 2 +82	6.47E+02	
	2 2-32	2.031+06	1.128+05	7.741+04	0.001+00	0.001+00	9.002+00	1.612+04	
	3 Cr-51	0.001+00	0.001+00	8.958+41	5.758+01	1.328+01	1.25X+04 1.00X+05	3.578+02	
	4 Kn-54 5 Fe-59	0.00 1+00 1.36 1+04	2.538+04 2.358+04	4.96X+03 9.48X+03	0.00 E +00 0.00 E +00	4.98X+03 0.00X+00	1.011+06	7.06 I +03 2.48 I +04	
	3 16-33	1.008.01	6.448(V1			*****		6. JVX. V1	
	6 Ca-57	0.001+00	6.51X+02	6.41E+02	0.001+00	0.001+00	3.79E+05	4.66 1 +03	
	T Co-58	0.00I+00	1.228+03	1.821+03	0.001+00	0.00E+00	7.778+05	1.118+04	
	8 Ca-60	0.002+00	8.02X+03	1.18E+04	0.00X+00	0.002+00	4.511+06	3.19 X+04	
	9 Za-65 10 Rb-86	1.93 I+ 04 0.00 I +00	6.26E+04 1.90E+05	3.11X+04 8.82X+04	0.00E+00 0.00E+00	3.25E+04 0.00E+00	6.478+05 0.008+00	5.14 1+04 3.04 1+0 3	
	10 10-00	V. UVATUV	1.348103	0.048191	AT AREAN	0.004100	0.005100	9.012100	
	11 Sr-89	3.981+05	0.00X+00	1.148+04	0.002+00	0.001+00	2.03X+06	6.401+04	
	. 12 Sr-90 🖯	4.09 X+07	0.001+00	2.591+06	0.001+00	0.001+00	1.12 E +07	1.311+05	
	13 T-91	5.881+45	0.00E+00	1.571+04		0.001+00	2.45 X +06	7.03 I +04	
	14 Ir-95	1.158+05	2.791+04	2.03E+04	0.00E+00	3.111+04	1.751+06	2.171+04	
	. 15 Kb-95	1.578+04	6.438+03	3.78\$+03	0.001+00	4.728+03	4.79X+05	1.278+04	
•	16 Tb-97	3.428-01	7.291-02	2.63X-02	0.00E+08	5.70E-02	3.328+03	2.69X+04	
•	17 Ko-99	0.008+00	1.651+02		0.001+00		1.358+05	4.878+04	
• •	18 Tc-99a	1.408-03	2.881-03	3.72 8 -02	0.00 E +00	3.11 8- 02	8.11E+02	2.031+03	
	19 Be-103	2.028+03	0.002+00		0.00E+00	4.248+03	5.521+05	1.618+04	,
	20 Ru-106	8.681+04	0.002+00	1.098+04	0.001100	1.071+05	1.168+07	1.641+05	
	21 Ag-110m	9.98 E+ 43	7 271-01	5.00 E +03	0.001.00	1.091+04	3.672+06	3.30 2 +04	
	22 Sb-124	J.79I+04		1.20E+04				5.918+04	
	23 Sb-125	5.178+04		· 1.09X+04				1.478+04	
	24 Te-127m	1.678+04	8.90I+03	2.071+03	4.871+03	3.751+04	1.318+06	2.731+04	
	25 Te-129m	1.418+04	6.09 1 +03	2.231+03	4.218+03	3.161+04	1.681+06	6.90X+04	
	26 I-131	1 701-01	4.441+04	1.968+04	1.488+07	5.181+04	0.002+00	1.062+03	
	20 1-131 27 1-133	J. /JE+04 1.32E+04	1.928+04		1.401+01 3.56E+06	2.24X+04	0.001+00	1.008+03 2.168+03	•
	28 Ca-134	3.961+05			0.001+00		7.971+01	1.331+03	
	29 Ca-136	4.831+04	1.351+05		0.001+00	5.641+04	1.188+04	1.43E+03	
	30 Cs-137		\$.12X+05	4.551+04		1.721+05	7.13 8 +04		
		· , • ,	F						
	31 Ba-140	5.60E+04	5.602+01		- 0.00E+00		1.601+06	3.841+04	
	32 La-140	5.058+02				0.00I+00	1.681+05		
	32 La-140 33 Ce-141 34 Ce-144	5.058+02 2.778+04 3.198+06	2.008+02 1.678+04 1.218+08	1.991+03	0.001+00	5.25X+03	5.178+05	2.161+04	

.

÷

· · E	Beaver Valle	v Power S	Station		Proce	dure Num			
itle:		<u></u>			Unit: 1/2		1/2-ODC-2.02 Level Of Use: In-Field Referenc		
DCM: GAS	EOUS EFFLUEN	:	Revis		Page Number:				
· · · · · · · · · · · · · · · · · · ·		<u> </u>					93.of_128		
			TACHMENT	1					
	•		age 5 of 19	OTTOD O					
		P&I OKGA	N DOSE FA	CIORS					
	i						۱		
			Table 2.3-8						
		Sautas a	FOR BEAVER VALLET ST	m					
		· .					•		
		(ng meta	er-mrem/jr per wCi/se						
	Pathway =	Ground		. • /. *					
			4	·	_				
	Tuclide	Bone Liver	T. Body Thyroid	Lidney	Lung	GI-LLI			
	1 #-3	0.00I+00 0.00I+00	0.001+00 0.001+00			0.00E+00			
	2 P-32 3 Cr-51	0.00I+00 0.00I+00 4.56I+05 4.55I+05				0.003+00 4.651+06			
	4 Kn-54 5 Je-59	1.398+09 1.398+09 2.738+08 2.738+08	1.391+09 1.391+09 2.731+05 2.731+08			1.39 1 +09 2.73 1 +08			
	- 2 15-33	2.138+00 2.138+00	2.131100 2.131100	2.131900 2		2.1J1788			
	\$ Co-57 7 Co-58	0.001+00 0.001+00 3.791+08 3.791+08	0.001+00 0.001+00 3.791+08 3.791+08			0.00I+00 3.78E+06			
	6 Co-60	2.158+10 2.158+10	2.158+10 2.158+10	2.151+10 2	1.158+10	2.158+10			
	9 In-65 10 Rb-86	7.471+05 7.471+08	7.471+08 7.471+08 8.991+06 8.991+06			7.478+08 8.998+06			
		ъ.,							
	11 Sr-89 12 Sr-90	2.16X+04 2.16X+04 0.00X+00 0.00X+00	2.18I+04 2.16I+04 0.00I+00 0.00I+00			2.16E+04 0.00E+00			
	13 T-91	1.071+06 1.071+05	1.071+06 1.071+00	1.072+06		1.071+06			
	14 Zr-95 • 15 Nb-95	2.45K+08 2.45I+08 1.37I+08 1.37E+08	2.458+08 / 2.458+08 1.378+08 1.378+08	2.45X+08 1 1.37X+08 1		2.45I+08 1.37I+08			
	16 Wb-97		0.00E+00 0.00E+00		,00 I +00	0.001+00			
	17 Ko-99	*4.00E+06 4.00E+06	4.00X+06 4.00X+00	4.001+06		4.002+06			
*	18 Jc-99n 19 Bu-103		1.841+05 1.841+05 1.081+08 1.081+08			1.841+05 1.081+08			
		. 4.221+08 4.221+08	4.228+08 4.228+08	4.221+08		4.228+08			
	21 Ag-110a	3 411-09 3 441-09	3.441+09 3.441+09	3 448469 ? :		3.4(1+09			
	22 55-124	0.001+00 0.001+00	0.00I+00 0.00I+00	0.00E+00	0.001+00	0.00X+00			
	23 Sb-125 24 Te-127a	0.001+00 0.001+00 9.178+04 9.178+04	0.001+00 0.001+00 9.178+04 9.178+04	0.001+00 9.111+64	D. DOI +00 3.17 1 +04	0.00X+00 9.17X+04			
	25 Te-129a	1.981+07 . 1.981+07	1.981+07 1.981+07	1.981+07	1.951+07	1.981+07			
- 	26 I-131		1.721+07 1.728+07		1.721+07	1.728+07			
	27 1-133	2.458+06 2.458+06	2.451+06 2.451+06	2.452+06	2.452+06	2.452+06			
•	26 Cs-134 29 Cs-136	6.858+09 6.858+09 1.518+08 1.518+08	6.861+09 6.861+09 1.511+08 1.511+08	6.851+09 1.511+08	8.861+09 1.511+08	6.868+09 1.518+08			
	30 Ca-137	1.031+10 .1.031+10				1.031+10			
	31 Ba-140	2.058+07 - 2.058+07	2.051+07 2.051+0	2.051+07	2.058+07	2.05X+07			
	32 La-140	.1.92I+07 (. 1.92I+07	1.921+07 1.921+0	(1.921+07 (1.921+07	1.921+07	• ,		
	33 Ce-141 34 Ce-144	- 6.96I+07 - 6.96I+07	1.371+07 1.371+0 6.951+07 6.961+0			1.378+07 6.968+07	:		
		d per ODCE equation 2.			• •				

``

•

Bea	aver Valle	y Power	Station	1	Proced	ure Nun 1	nber: /2-ODC-2.02	
Title:			· · · · · · · · · · · · · · · · · · ·		Unit:		Level Of Use:	
					1/ Revisio		In-Field Reference	<u>-</u> ''
ODCM: GASEO	US EFFLUEN	ſS				ю.	Page Number: 94 of 128	.1
		AT	ГАСНМЕ	ENT J				-
	•	· I	Page 6 of	19				
1		P&I ORGA	AN DOSE	E FACTORS	5			
			Table 2.3-7					
		, R VALUE	FOR BEAVER VA	LLEY SITE				
		(sg net	ter-area/yr per	wCi/sec)			•	
	Pathway = Ago Group	Vegetation = Adult						
	. Wuclide	Bone Liver	1. Body	Thyroid Lidney	Lang	61-UI		
	1 1-3	0.00E+00 2.26E+03		.261+03 2.261+03	2.261+03 2.	26 E+0 3		
	2 P-32 3 Cr-51	1.40E+09 8.74E+07 0.00E+00 0.00E+00		.00E+00 0.00E+00 .78E+04 1.02E+04		58 8+ 08 17 8+0 7		
	4 Ha-54 5 Ye-59	0.001+00 3.131+08 1.251+08 2.961+08	5.9TE+07 0	.001+00 9.311+07 .001+00 0.001+00	0.001+00 9.	591+08 681+08		
	· 、	• • •	· •.	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	•••			
	\$ Co-57 7 Ca-58 j	0.001+00 1.171+07 0.001+00 3.071+07	6.89E+07 0	0.00 1 +00 9.00 1 +00 0.00 1 +00 0.00 1 +00	0.002+00 6.	97 I+ 08 23 I+ 08		
	8 Co-80 9 In-65	0.001+00 1.671+05 3.171+08 1.011+09		0.001+00 0.001+00	0.001+00 J. 0.001+00 S.	14 1+09 36 1+08		
	10 Xb-86	0.001+00 2.191+08		0.002+09 0.002+00	0.001+00 4.	33 8 +07		Ì
	11 Sr-89	9.978+09 0.008+00 6.058+11 0.008+00		.00E+00 0.00E+00		60E+09 75E+10		
	12 Sr-90 13 T-91	5.11E+06 0.00E+00	1.378+05 0	0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.001+00 2.	812+09		
	14 Ir-95 15 Ib-95	1.178+06 3.778+05 1.428+05 7.928+04		0.00 I+00 5.91I+05		19 2+09 81 2+08		
	16 Kb-97	2.161-06 5.461-07	1.998-07 0	.00E+00 6.37E-07	0.00I+00 Z.	028-03	·	
	- 17 Ka-99	0.00E+00 6.15E+08	1.178+06 0	.001+00 1.391+07	0.001+00 1.	43 X+ 07		
+	18 Tc-99m 19 Ru-103	3,10 E+00 8. 77 E +00 6.77 E+06 0. 00 E +00	2.061+06 0	0.00 I+00 1.33 I +02 0.00 I+00 1.62 I +07	0.002+00 5.	19 1 +03 57 1 +08		
	26 Re-106	1.93E+08 0.00E+00	2.441+07	.001+00 _ 3.721+08	0.002+00 1.	25 X +10		
	21 Ag-110m	1.051+07 9.751+06		001+00 1.921+07		961+09		
	22 Sb-124 23 Sb-125	1.041+08 1.961+06 1.371+08 1.531+08	3.25I+07 1	2.51 1 +05 0.00 1 +00 1.39 1 +05 0.00 1 +00	1.058+08 1.	.94 1 +09 .50 1 +09		ł
	24 Te-127m 25 Te-129m	3.491+08 1.251+08 2.511+08 9.381+07	4.268+07 8 3.988+07 8	5.92X+07 1.42X+09 5.64X+07 1.05X+09		.17 8 +09 .27 8 +09		
	26 1-131	8.08 1 +07 1.16 1 +08		3.79 E +10 1.98 E +08	, - .	052+07		
T the	27 1-133	2.091+06 3.631+06	1.111+06	5.332+08 . 6.332+06	9.00I+00 3.	26 1+06		
ļ	28 Cs-134 29 Cs-136	4.67E+09 1.11E+10 4.27E+07 1.69E+08		D.00E+00 J.59E+09 D.00E+00 9.38E+07		.94 X+08 .91 X+07		
	30 Cs-137	6.36E+09 6.70E+09		0.001+00 2.951+09		681+08		
	31 Ba-140	1.298+08 1.618+05	8.421+06	0.002+04 5.492+04	9.248+04 2	652+08		
1		1.981+03 9.978+02 1.978+05 1.338+05	2.638+02	0.00E+00 0.00E+00 0.00E+00 5.19E+04	0.001+00 7.	.32 E+07 .10 E+08	-	
	34 Ce-146	· · · ·		0.00E+00 8.15E+06		.118+10		
		ides (except H-3) cald		Megnetica 2.3-26				
		ulated per ODCM equation						

1

•

:

:

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Unit: 1/2 Revision: 1 Lang GI-LLI 591+03 2.591+03 501+00 1.351+08 511+04 1.041+07 501+00 9.321+08 521+08 9.901+08 501+00 3.331+08 501+00 3.241+09	I/2-ODC-2.02 Level Of Use: In-Field Reference Page Number: 95 of 128
ATTACHMENT J Page 7 of 19 P&I ORGAN DOSE FACTORS 1 Table 2.3-3 I I Table 2.3-3 I VILUTS FOR BLATE VALLET SITE (og seter-arces/yr per sCi/sec) Pathway = Vegetation Ago Group = Toes Naclide Naclide Liver 'T. Body Thyrold Lidsey 1 #-3 0.001400 2.591403 2.591403 2.591403 2.591403 2.591403 1 #-3 0.001400 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403 2.591403	Revision: 1 Lang 61-LLI 591+03 2.591+03 101+00 1.351+08 111+04 1.041+07 1001+00 9.321+08 121+08 9.901+08 101+08 101+08	Page Number: 95 of 128
Page 7 of 19 P&I ORGAN DOSE FACTORS I Table 2.3-8 I VILUES FOR BLATE VALLET SITE Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2">Colspan="2"Cols	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	
Page 7 of 19 P&I ORGAN DOSE FACTORS I Table 2.3-8 I VILUES FOR BLATE VALLET SITE Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"Colspan="2"Colspan="2">Colspan="2"Cols	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	1
P&I ORGAN DOSE FACTORS I Table 2.3-8 Table 2.3-8 I VILUTS FOR BLATER VILLET SITE (gg meter-mrem/yr per wCi/sec) Pethway = Vegetation Age Group = Tees Fuelide Liver T. Body Thyroid Eldery 1 B-3 0.001+00 2.591+03	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	1
I Table 2.3-8 Falle 2.3-8 R VALUES FOR BEATER VALLET SITE Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"Colspan="2">Colspan="2"Cols	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	1
Table 2.3-8 I VALUIS FOR BLAYER VALLET SITE (sq meter-mrem/yr per uCi/sec) Pathway = Vegetation Age Group = Tees Huclide Liver T. Body Thyroid Eldmay 1 H-3 0.001+00 2.591+03 2.591	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	•
R VALUES FOR BLATER VALLEY SITE (sq meter-mrem/yr per uCi/sec) Pathway = Vegetations Age Group = Teen Huclide Bone Liver T. Body Thyroid Lidney 1 H-3 0.001+00 2.591+03 2.591+	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	·
R VALUES FOR BLATER VALLEY SITE (sq meter-mrem/yr per uCi/sec) Pathway = Vegetations Age Group = Teen Huclide Bone Liver T. Body Thyroid Lidney 1 H-3 0.001+00 2.591+03 2.591+	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	
R VALUES FOR BLATER VALLEY SITE (sq meter-mrem/yr per uCi/sec) Pathway = Vegetations Age Group = Teen Huclide Bone Liver T. Body Thyroid Lidney 1 H-3 0.001+00 2.591+03 2.591+	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	· · ·
R VALUES FOR BLATER VALLEY SITE (sq meter-mrem/yr per uCi/sec) Pathway = Vegetations Age Group = Teen Huclide Bone Liver T. Body Thyroid Lidney 1 H-3 0.001+00 2.591+03 2.591+	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	•
(og meter-mrem/yr per uCi/sec) Pathway = Vegetation igo Group = Tees Nuclide Bone Liver T. Body Thyroid Lidney 1 H-3 0.001+00 2.591+03 2.591+03 2.591+03 2.591+03 2.59 2 F-32 1.611+09 9.961+07 6.241+07 0.001+00 0.001+00 0.0 3 Cr-51 0.001+00 0.001+00 6.171+04 3.431+04 1.351+04 8.8 4 Mn-54 0.001+00 4.541+08 9.011+07 0.001+00 1.361+08 0.0 5 Fe-59 1.791+06 4.191+07 3.001+07 0.001+00 0.001+00 1.3 6 Co-57 0.001+00 1.791+07 3.001+07 0.001+00 0.001+00 0.0 7 Co-58 0.001+00 1.791+07 3.001+07 0.001+00 0.001+00 0.0 6 Ca-60 0.001+00 1.791+07 3.001+07 0.001+00 0.001+00 0.0 9 Ja-85 4.241+08 1.471+09 6.871+08 0.001+00 9.421+08 0.0 10 Fb-86 0.001+00 2.741+48 1.291+08 0.001+00 0.001+00 0.0	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	· . ·
Fathway = Vegetation Ige Group = Tees Nuclide Liver T. Body Thyroid Lidney I H-3 0.001+00 2.591+03 2.591 3	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	· ·
Ign Group = Teen Huclide Bone Liver T. Body Thyroid Lidaey 1 H-3 0.001+00 2.591+03	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	
Huclide Bone Liver T. Body Thyroid Eidacy 1 H-3 0.001+00 2.591+03 2.591 2.591 2.591+03 2.591+	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	•
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	59E+03 ² 2.59E+03 10E+00 1.35E+08 11E+04 1.04E+07 100E+00 9.32E+08 12E+08 9.90E+08 10E+00 1.33E+08 10E+00 5.01E+08	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.351+08 1.151+08 1.1041+07 001+00 1.321+08 1.21+08 1.21+08 1.331+08 001+00 1.331+08 001+00 1.331+08 001+00 1.331+08 001+00 1.331+08	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	31E+04 1.04E+07 30E+00 9.32E+08 32E+08 9.90E+08 30E+00 3.33E+08 30E+00 5.01E+08	
5 Fe-53 1.791+08 4.191+08 1.621+08 0.001+00 0.001+00 1.3 8 Co-57 0.001+00 1.791+07 3.001+07 0.001+00 0.001+00 0.0 7 Co-58 0.001+00 4.361+07 1.001+00 0	32 2 +08 9.902+08 30 2 +00 3.332 +08 30 2 +00 \$.012 +08	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	001+00 3.331+08 001+00 6.011+08	. '
7 Co ⁻⁵⁸ 0.001+00 4.361+07 1.001+03 0.001+00 0.0	80+110.3 00+100	•
9 Ia-85 1 I St-89 1	MX400 3.24X409	
11 St-89 1.518+10 0.008+00 4.348+08 0.008+00 0.008+00 0.0 12 St-90 7.518+11 0.008+00 1.858+11 0.008+00 0.008+00 0.0	01+00 6.231+08	-
12 Sr-90 7.51E+11 0.00E+00 -1.65E+11 0.00E+00 0.00E+00 0.0	00E+00 - 4.05E+07	· ,
	008+00 1.808+09 008+00 2.118+10	
	00 8+00 3.218+0 9	
	00I+00 1.25I+09 00I+00 4.56I+08	
16 B5-97 2.001-08 - 4.971-07 1.811-07 7 0.001+00 5.811-07 0.0	DOI+00 1.19E-02	•
17 Ba-99 0.001+00 5.651+06 1.081+08 0.001+00 1.291+07 0.0	BOE+00 1.01E+07	
19 Ru-103 - 6.828+06 - 0.008+00 - 2.928+06 - 0.008+00 - 2.418+07 0.0	Z4I+00 5.02I+03- DOE+00 5.70I+08	
20 Hz-106 2.331+08 0.001+00 3.901+07 0.001+00 5.971+08 0.0	001+00 1.481+10	•
21 Ag-110a 1.528+07 1.438+07 8.728+08 0.008+00 2.748+07 0.0 22 Sb-124 1.548+08 2.848+06 8.028+07 3.508+05 0.008+00 1.3		
23 55-125 2.141+08 2.341+06 5.011+07 2.051+05 0.008+00 1.8	688+08 1.67 8 +09	
24 Te-127a 5.521+08 1.961+08 6.561+07 1.311+08 2.241+09 0.0 25 Te-129a 3.621+08 1.341+08 5.731+07 1.111+08 1.511+09 0.0		•
26 I-131 7.698+07 + 1.688+08 5.788+07 3.148+10 1.658+08 0.0	001+00 2.131+07	
27 1-133 1.941+06 3.291+06 1.001+06 4.591+08 5.771+06 0.0	001+00 2.491+06	
29 Cs-135 4.381+07 1.721+08 1.161+88 0.001+00 9.371+07 1.4	481+07 1.391+07	•
30 Cs-137 1.018+10 1.358+10 4.598+09 0.008+00 4.598+09 1.1	781+09 1.921+05	
-31 B4-140 1.381+08 1.691+05 8.901+06 0.001+06 5.741+04 1.1 32 La-140 1.811+03 8.881+02 2.361+02 0.001+00 0.001+00 0.0		
33 Ce-141 2.831+05 1.891+05 2.171+04 0.001+00 8.901+04 0.4	001+00 5.411+08	
34 Ce-144 5.278+07 2.188+07 2.838+06 0.008+00 1.308+07 0.4	00X+00 1.33X+10	

.

•

:

_-----

•

	leaver	Valle	v Po	Wer	Static	<u></u>		Proc	cedure Nun	
		v ano	<u>y 10</u>		Jun	<u> </u>		<u> </u>		/2-ODC-2.02
itle:	,							Uni		Level Of Use:
11.									1/2	In-Field Reference
DCM: GASI	EOUS EFF	FLUEN	ГS					Rev	ision: 1	Page Number: 96 of 128
<u> </u>				ATT	ACHI	IENT J			L	90 01 128
					age 8 c					
		-			<u> </u>					
			P&I	ORGA	IN DO:	SE FAC	TORS			
	•									•
					Table 2.3-)				
				R VALUES	FOR BLATTR	VALLET SIT	1			
				(sg net	er-sres/sr	per vCi/sec)			•
		Fathway =	Vegetation							
		Age Group	= Child					•		
		Faclide	Bone	Liver	T. Body	Thyroid	lidney	lung	gi-lli	
		1 8-3	0.00E+00	4.01 8 +03		. 4.01X+03	4.01 E +03	4.012+03	6.01E+03	
		2 2-32			1.301+08		0.002+00	0.001+00		
		3 Cz-51	0.002+00		1.178+05	6.50X+04	1.788+04		6.211+06	
		4 Ma-54 5 Fe-59	0.001+00 · 3.981+08	8.43E+08	1.77E+08 3.20E+08	0.001+00	1.56 E +05 0.00 E +00	0.00 0+0 0 1.87 0 +08	5.58 E+08 6.70 E+08	
				9 008-05		A AAP. AA	A ANT:AA		4 158.08	
		6 Ca-57 7 Ca-58	0.00I+00 - 0.00I+00	6.441+07	6.04I+07 1.97I+08	0.00E+00 0.00E+00	0.00I+00 0.00I+00	0.00X+00 0.00X+00	2.458+08 3.768+08	
		8 Ca-60	0.002+00 :			0.002+00	0.001+00	0.002+00	2.102+09	
		9 Za-65	8.13I+08		1.351+09		1.362+09	0.00I+08	3.80X+08	
	1	lo R6-86	· 0.00 1 +00	1.528+08	2.781+08	0.00X+00	. 0.01100.	0.002+00	2.91 I +07	
•		11 Sr-89	3.602+10	0.00I+00	1.032+09		0.002+00	0.00E+00	1.391+09	
			- 1.2(\$+12	9.00X+00	3.158+11	0.002+00	0.001+00	0.00X+00	1.678+10	
		13 Y-91		0.001+00	4.991+05	0.001+00	0.001+00	0.00I+00	2.481+09	
		14 Zr-95 15 Xb-95		8.488+05 1.608+05	7.55 8 +05 1.14 8 +05	0.001+00	1.21 8 +06 1.50 8 +05	0.00I+00 0.00I+00	8.85 X+ 08 2.96 X +08	
								A 448.44		
		16 ID-97' 17 Ko-99	- 0.00X+00		3.081-07 1.911+06		7.31I-07 1.65I+07		2.038-01 6.388+06	
•		18 Te-99a		9.241400			- 1.34I+02		5.261+03	
			- 1.532+07		5.908+06		3.861+07		3.972+08	
	· •	20 Ru-106	7.45K+08 -	0.002+00	9.308+07	0.001+00	1.01 E+8 9	0.002+00	1.168+10	
		21 Ag-110m	3.218+07	2.178+07	1.738+07	0.00 I +00	4.042+07	0.00E+00	2.58 8 +09	
	:	22 55-124				7.771+05		1.951+08	2.201+09	
		23 56-125				4.631+05		. 2.761+08	1.191+09	
		24 Te-127m 25 Te-129m -				3,168+08 - 2,718+08		0.001+00 0.001+00	1.07 8 +09 1.03 8 +09	
		1648	41149'VV						•	•
472 .			· 1.43E+08					0.001+00	1.281+07	
		27 I-133				8.12I+08		0.00E+00	1.761+06	
		28 Cs-134 29 Cs-136		Z.631+10 2.271+06		00+100.0		2.93E+09 1.60E+07	1.428+08 7.968+06	
		30 Ca-137		2.298+10			7.461+09		1.431+06	
		31 [°] Ba-140	. 9 778-04	9 108-04		6 00F+00	7 807-04	1.451+05	1.402+08	• •
		32 La-140		1.138+03		0.00I+00	7.89X+04 0.00X+00			
		33 Ce-141				0.00E+00		0.001+00		
		34 Ce-144					2.211+07			

All muclides (except H-3) calculated per ODCH equation 2.3-26 H-3 calculated per ODCH equation 2.3-29

:

. . .

1	Beaver	r Valle	ev Po	wer.	Static	<u>י</u> תר	•	Proc	edure Nun	•	•
Title:			<u> </u>					Unit		/2-ODC-2.02 Level Of Use:	
· · · · ·									1/2	In-Field Refere	псе
ODCM: GAS	FOUSF	FFI LIEN	TS					Revi	sion:	Page Number:	
							· ·	· · ·	1	97.of.128	
				ATI	CACHN	IENT J					
				P	Page 9 o	of 19 👘					
			P&I	ORGA	N DO	SE FAC	TORS				
					• .					ł	
	-										
				į	Table 2.3-	10					
						VALLEY SIT	•				
											۰,
				(sq set	er-area/gr	per uCl/sec)				
		Pathway =						;			•
		Age Group	= Adult					•			
	•	Nuclide	Bone	Liver	1. Body	¹ Thyrold	Eldney	Lung	61- L LI		
	• •	1 R-3	0.001+00	3.251+02	3.251+02	3.258+02	3.251+02	3.251+02	3.251+02		
		2 2-32	3.95X+09		1.531+08	0.001100.0	0.001+00	6.00I+00	4.441+05		
		3 Cr-51 4 Ha-54	0.00I+00 0.00I+08		5.86I+03 1.24I+06	3.50X+03 0.00X+00	1.291+03 1.931+06	7.781+03 8.001+00	1.471+06 1.991+07		1
	,	5 Fe-59	2.141+08	5.041+08	1.938+08	0.00E+00	0.00I+00	1.418+08	1.681+09		
	:	6 Co-57	0.008.00	4.012+06	A	0.001+00	8.001+00	0.001+00	1.028+08		:
		7 Co-58	0.001100	1.421+07	3.181+07	0.00T+00	6.00I+00	0.001+00	2.871+08		
		8 Co-60		5.121+07	1.131+08		8.00I+00	6.00X+00	9.611+08		,
	۰.	9 Ia-65 10 Rb-86	2.54X+08 0.00X+00	8.091+08 4.111+08	-3.661+08 1.921+08	0.001+00 0.001+00	5.41X+08 8.00X+00	0.00X+00 0.00X+00	5.10I+08 8.11I+07		
•					¹				4 499.47		:
		11 Sr-89 12 Sr-90	2.418+06 8.418+09		6.921+06 2.061+09	0.001+00 0.001+00	0.00X+00 9.00X+00	0.00I+00 0.00I+00	3.878+07 2.438+08		:
		13 T-9 1	8.941+05	0.001100	2.391+04	0.001+00	0.001100.0	0.001+00	4.928+08		
	÷	14 Ir-95 15 Ib-95	- 1.478+06 1.89E+06	4.718+05	3.19I+05 5.64I+05	0.001+00	7.39X+05 1.04X+06	0.001+00 6.001+00	1.491+09 6.371+09		
	,	13 10-23	1.038100	1.051+06		V.V.ATV	L.VILTUD	0.008700	0.318703		
	• •			*******	********		*******			l	
	•	17 Bo-99 18 Tc-99m	0.00E+00		1.621+04	0.0000+00	1.938+05 1.648-19	5.30T-21	1.978+05 6.408-18		
		19 Ru-103	8.578+07	0.001+00	3.69I+07	0.00X+00	. 3.271+ 08	0.001+00			
		20 k u-106	1.978+09		2.491+08	0.001+00	3.801+09	0.00 1 +00	1.278+11		ī
		- 21 Ag-110m	· . 4.TTE+06	4.418+06	2.628+05	0.00E+00	8.67E+06	0.00X+00	1.801+09		
		22 Sb-12(0.001+00	- 0.00E+00	0.00X+00	0.001100	0.008+00	0.001100.0	0.001+00		-
	•						0.00I+00 3.40I+09		0.00I+00 2.81I+09		į
							3.891+09		4.708+09		•
	• .				·					• •	:
		26 I-131 27 I-133	9.134+06 3.128-01	1.318+07	1.652-01	4.251+09 7.562+01	2.241+07 9.461-01 -	0.001+00 0.001+00	3.45I+06 4.878-01		•
		28 Co-134	4.538+08	1.081+09	8.61E+08	0.001+00	J.491+08	1.168+08	1.891+07		
		29 Cs-136	1.021+07	4.041+07	2.91I+07	0.008+00	2.251+07	3.08K+06	4.598+06		

.

: t z •

-.

•

ţ

÷ ł

......

;

) . . ł

:

1.021+07 4.041+07 2.911+07 0.005+00 2.251+07 3.081+06 4.591+06 5.901+08 8.061+08 5.261+08 0.001+00 2.741+08 9.101+07 1.561+07 30 Ca-137
 31
 Ba-140
 2.441+07
 3.081+04
 1.601+06
 0.001+00
 1.041+04
 1.751+04
 5.021+07

 32
 La-140
 3.161-02
 1.591-02
 4.218-03
 0.001+00
 0.001+00
 0.001+00
 1.1751+04
 5.021+07

 33
 Ce-141
 1.161+04
 7.831+03
 8.681+02
 0.001+00
 3.641+03
 0.001+00
 2.991+07

 34
 Ce-144
 1.031+06
 4.321+05
 5.551+04
 0.001+00
 2.562+05
 0.001+00
 3.501+08

All muclides (except H-3) calculated per ODCM equation 2.3-25. H-3 calculated per ODCM equation 2.3-30 ...

Bea	ver Valle	ey Po	wer	Static	on	 	Proc	edure Nun	aber: /2-ODC-2.02
lītle:							Uait		Level Of Use:
	. • . • :						<u> </u>	1/2	In-Field Reference
ODCM: GASEOU	IS EFFLUEN	TS					Rev	isio n:	Page Number:
							I	1	<u>98 of 128</u>
			ATI	CACHI	ÆNT J	ſ			
			Pa	age 10 (of 19	•			
		P&I		Ň DOS		TORS			
				Table 2.3-1	11				
			R VALUES	FOR BEAVER	TALLET SIT	ľ			
			too ask	· · ·	n an ann ann Iana				
			. 194 BCL	er-area/se	por UU1/88C	J			
	Fathway :								
	Age Group	e = Teen				•	•		
	Buclide	Bone	Liver	1. Body	Thyroid	Kidney	Lang	GI-LLI	
	1 K-3 -	0.001+00	1.941+02	1.942+02	1.9(2+02	1.948+02	1.948+02	1.948+02	
	. 2 P-32		2.071+08	1.291+08	0.00X+00	0.002+00	9.00E+00	2.801+08	
	3 Cr-51		0.002+00	4.692+03	2.601+03	1.032+03	8.69 1 +93	7.88E+05	
	4 Kn-54 5 Je-59	0.00E+00 1.71E+08	4.95 X+06 4.00 X+08	9.818+05 1.548+08	0.00E+00 0.00E+00	1.48 8+06 9.00 8 +00	0.00X+00 1.26X+08	1.01X+07 9.45X+08	
	9 78-93	1.112100	1.001100	1.34140	V. VVETUU	V.VVATVV	T-TOBLOG	4.34LTV0	
	6 Co-57 -	0.002+00		5.401+06	0.001100	0.002+00	0.001+00	6.01X+07	
	7 Co-58 -		1.091+07		0.00I+00	0.002+00	0.001+00	1.512+08	
	8 Co-60	0.001100	3.97E+07		0.002+00	0.002+00	0.00E+00	5.17E+08	
	9 Za-65 10 Kb-86	1.791+08 0.001+00		2.908+08 1.618+08	0.001+00	3.97X+08 0.00X+00	0.00 %+00 0.00 %+00	2.63X+08 5.08X+07	
	, 10 KD- 00	0.008100	J.4JE708	1.018400	0.00E+00	V.VVLTVV	0.00BT00	J.VGETVI	
•	11 Sr-89	2.03E+08	0.002+00	5.832+06	0.008+00	0.002+00	0.002+00	2.428+07	
	12 Sr-90	5. ((1+09	0.00I+00		0.001100.0	0,001+00	0.00E+00	1.531+08	
	13 T-91	7.538+05		2.028+04		0.001+00	0.00I+00	3.091+08	
•	14 Ir-95	1.182+06	3.718+05	2.551+05	0.001+00	5.451+05	0.00E+00	8.561+08	
	15 T b-95	1.478+08	8.178+05	4.502+05	0.001+00	7.928+05	0.002+00	3. (91+09	
	16 Kb-97			***********	0.001+00	********	0.00T+00	********	
	17 10-99		7.03X+04		0.002+00		0.00E+00	1.261+05	
	18 Tc-99a			1.101-19			4.718-21	5.578-18	
• ·	19 Ri-103	6.961+07	0.00E+00	2.981+07	0.001+00	2.468+08	0.00T+00	5.83X+09	
	20 Ri-106	1.281+09	0.001+00	2.091+08	0.00E+00	3,192+09	0.001+00	7.941+10	

_**___**

All nuclides (except H-3) calculated per ODCM equation 2.3-25 H-3 calculated per ODCM equation 2.3-30 ...

6.721+05 3.611+05 4.681+04 0.001+00

7.598+08 1.068+07 5.718+06 2.618-01 4.428-01 1.358-01

3.601+08 8.481+08 3.931+08 7.981+06 3.141+07 2.111+07 4.901+08 6.511+08 2.271+08

2.028+07 2.478+04 1.308+06 2.608-02 1.288-02 3.408-03

3.60I+08

26 I-131

27 I-133

28 Ca-134

29 Ca-136

30 Ca-137

31 Ba-110

32 La-140

33 Cé-141

34 Ce-144

·. .•

÷

 21
 1g-110m
 3.611+06
 3.421+05
 2.081+06
 0.001+00
 6.521+05
 0.001+00
 9.601+08

 22
 Sb-124
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 0.001+00
 1.761+09

 25
 Te-127m
 7.321+08
 2.901+08
 1.241+08
 2.521+08
 3.271+09
 0.001+00
 2.931+09

3.108+09

0.001+00

0.001+00 0.001+00

9.728+03 6.498+03 7.468+02 0.008+00 3.068+03 0.008+00

1.631+07

1.718+07

8.381+03

0.001+00 0.001+00

6.17E+01 ' 7.75E-01

0.001+00 2.691+08

0.001+00 2.221+08

0.002+00

0.001+00

1.031+08

2.691+06

· 8.61E+07

1.651+04

2.15E+05 0.00E+00 2.19E+08

2.101+06

3.348-01

1.051+07

2.53E+06

9.278+06

3.111+07

7.331+02

1.861+07

:

• • • •	Beaver Valley Power Station	Procedure Nu	1/2-ODC-2.02
itle:		Unit:	Level Of Use:
		<u>1/2</u> Revision:	In-Field Reference Page Number:
	ASEOUS EFFLUENTS	1	99 of 128
	ATTACHMENT J		· · · · · ·
	Page 11 of 19		
	P&I ORGAN DOSE FACTORS		
	ι.		i .
	Table 2.3-12		
	B VALUES FOR BLATER VALLEY SITE		
	(sq meter-mres/yr per wCi/sec)		• :
		2 . .	•
	Pathway = Beat Age Group = Child		•
	Yuclide Bone Liver 7. Body Thyrold Lidney	Lang GI-LLI	
	1 H-3 0.008+00 2.348+02 2.348+02 2.348+02 2.348+02	2.348+02 2.348+02	·
	2 P-32 6.291+09 2.941+08 2.431+08 0.001+00 0.001+00	0.001+00 1.748+08	
	4 Ka-54 0.001+00 5.661+06 1.511+06 0.001+00 1.591+06	0.001+00 4.751+00	
	5 Fe-59 3.048+08 4.918+08 2.458+08 0.008+00 0.008+00	1.428+08 5.128+08	
	6 Ca-57 0.001+00 4.211+08 8.521+06 0.001+00 0.001+00 7 Ca-58 0.001+00 1.281+07 J.911+07 0.001+00 0.001+00	0.001+00 3.451+07 0.001+00 7.451+07	
	8 Co-60 0.008+00 4.728+07 1.398+08 0.008+00 8.008+00	0.001+00 2.611+00	l :
٠	9 In-85 2.653+08 7.151+08 4.448+08 0.008+00 4.508+08 10 Fb-88 0.008+00 4.878+08 2.998+08 0.008+00 0.008+00	0.00I+00 1.25I+08 0.00I+00 3.13I+03	
•	11 St-89 3.858+08 0.008+00 1.108+07 0.008+00 0.008+00	0.002+00 1.492+07	1
	12 Sz-90 7.031+09 0.001+00 1.781+09 0.001+00 0.001+00	0.001+00 9.471+0	1
	14 Ir-95 2.091+06 4.591+05 4.091+05 0.001+00 6.578+05	0.001+00 4.791+0	3
	10 8-80 2.048400 8.808400 1.018400 0.008400 8.308403		į
	16 Kb-97 = \$		1
	10.Tc-99. 5.331-21 1.05E-20 1.73E-19 0.00E+00 1.52E-19	5.311-21 5.951-1	8
	19 Ru-103 1.288+08 0.008+00 4.858+07 0.008+00 3.188+08 20 Ru-106 3.128+09 0.008+00 3.898+08 0.008+00 4.218+09	0.008+00 3.268+0 0.008+00 4.858+1	
	21 Ag-110m 5.998+06 4.048+08 3.238+08 0.008+00 7.538+06	0.00I+00 4.81I+0	8
	22 55-124 0.008+0000000000	0.001+00 0.001+0	
	24 Te-127s 1.338+09 3.598+08 1.588+08 3.198+08 3.808+05	0.008+00 1.088+0	9
	25 Te-129x 1.478+09 4.118+08 2.298+08 4.758+08 4.338+05		
	26 I-131 1.418+07 1.428+07 8.048+06 4.688+09 2.328+0 27 I-133 4.848-01 5.998-01 2.278-01 1.118+02 9.988-0		
	28 Ca-134 6.351+88 1.041+09 2.201+08 0.001+00 3.238+04	1.16X+08 5.62X+0	6
	29 Cs-136 1.381+07 3.181+07 2.451+07 0.008+00 2.011+07 30 Cs-137 9.028+08 8.638+08 1.278+08 0.008+00 2.818+08		
	31 Ba-140 3.72E+07 3.28E+06 2.17E+08 0.00E+00 1.08E+0	L § . 1.94X+04 1.89 X+0	7
	32 La-140 4.76L-02 1.66L-02 5.61L-03 0.00L+00 0.00L+04 33 Ce-141 1.83L+04 9.13L+03 1.36L+04 0.00L+00 4.00L+0	• 0.00I+00 4.63I+0	
	34 Ce-144 1.64E+06 5.15E+05 8.77E+04 0.00E+00 2.85E+0		
	All muchides (except H-3) calculated per ODCH equation 2.3-25		
	E-3 calculated per ODCH equation 2.3-30	.'	
			• .
			:
		•	•

Ì

.

ì

2

;

:

1

2

mana kana ang pangangan

Beave	er Valley Po	wer Statio	on .	: •	Proc	edure Nun	•	
					Unit		/2-ODC-2.02	
	. •					1/2	In-Field Reference	,
DCM: GASEOUS	EFFLUENTS					sion:	Page Number:	
						1	100 of 128	
		ATTACHN	MENT J					
	•	Page 12	of 19				•	
	P&	I ORGAN DO	SE FACI	ORS				
		•						
		Table 2.3-	13					
		. E VALUES FOR BRAVER	VALLET SITE					
		(sq meter-area/yr	per uCi/sec)				-	
	Pathway = Cow Hilk Age Group = Adult							
	Roclide Bone	Liver 1. Body	Thyrold	Lidney	Long	GI-LLI		
		7.638+02 7.638+02			7.638+02	7.631+02	,	
		9.018+08 5.608+08			0.00I+00	1.631+09		
· · ·	3 Cr-51 0.008+00 4 Kn-54 0.008+00		0.001+00 1	.778+06	3.15 8+04 0.00 8 +00	5.98X+08 1.82X+07		
			0.00E+00 0		1.578+07	1.681+08		
	- 6 Co-57 0.001+00	9.10E+05 1.51E+06	0.008+00	.001100	0.001+00	2.318+07		
	7 Ca-58 0.00E+00	3.6TE+06 8.22E+06	. 0.00E+00 0	.002+00	6.00E+00	7.432+07		
	8 Co-60 0.001+00 9 Za-55 9.601+08				0.00I+00 0.00I+00	2.10 1+08 1.96 1+09		
	10 Rb-86 0.008+00				0.00E+00	4.32\$+08		
•	11 Sr-89 1.168+09	0.001+00 3.331+07	0.001+00).00E+00	0.00I+00	1.565+08		
•	12 Sr-90 + 3.168+10	0.002+00 - 7.781+09	0.001+00	001100	0.001+00	9.14X+08		
· · · ·		2.0.00I+00 1.81I+02 2.37I+02 1.61I+02			0.008+00 0.008+00	3.73 1 +06 7.52 1 +05		
	•••••	- 3.77E+04 2.03E+04			0.001+00	2.291+08		
	16 Ib-97	7.11E-13 · 2.60E-13	. 0 002+00	308-19	0.00X+00	2.628-09		
	17 No-99 0.00I+00	2.118+07 4.018+08	0.00Z+00	4.178+07		4.881+07		
₽		T.99E+00 1.02E+02			3.91X+00 0.00X+00	4.73I+03 9.68I+04		
••		0.00E+00 3.57E+02 0.00E+00 1.81E+03		3.168+03 2.778+04		9.271+05		
		* #/#,			•	1 278-14		
	21 Ag-110= 4.168+07 22 5b-124 0.008+00				0.00X+00 0.00X+00	1.57 1 +10 0.06 1 +00		
	23 Sb-125 0.00E+00	. 0.00I+00 0.00I+00	0.002+00	0.001+00	0.001+00	0.001+00	•	
		1.231+07 4.198+08 1.851+07 7.841+08			0.00I+00 0.00E+00	1.15X+08 2.49X+06		
		. 3.601+08 2.061+08 5.721+06 1.751+08			0.00X+00 0.00X+00	9.50 1 +07 5.14 1 +06		
·		9.278+09 7.588+09		3.002+09	9.961+08	1.621+08		
. ** . >-,		8.82E+08 6.35E+08			6.73E+07	1.001+08	,	
	.90 CH-T91 - 2 41238403	6.82X+09 4.47X+09			7.701+08	1.321+08		
• .		2.878+04 1.498+06		9.741+03		4.70E+07		
)		0.00I+08 1.25I+03 -	0.001100.0	1.42 I +05 1.03 I +07	•	
		1.068+05 1.368+04				8.588+07		

:

\mathbf{B}	leaver Valle	y Powe	r Stati	on	• •	Рго	cedure Nui 1	mber: /2-ODC-2.02
Title:		n 7 • 10	e i e era			Uni		Level Of Use: In-Field Reference
ODCM: GASE	EOUS EFFLUEN	ГS			•	Rev	vision:	Page Number:
· · · · · · · · · · · · · · · · · · ·	· · · · · ·		TTACID	ACATE I	r		_1	101 of 128
			TTACHI Page 13	-	1	•		
	•		GAN DO	,	CTORS			
				·	•			
			Table 2.3	-14				
		- 1 4	LUIS FOR BLAVE	R VALLET SIT	z			
		 [#	neter-sres/jr	per wC1/sec	1			
	Pathway =			•	•			•
	Lee Group							
	Juclide	Bose Li	ver I. Body	Thyroid	Lidney	leg	GI-LLI	
		0.008+00 9.941		9.942+02		9.941+02	9.941+02	
	2 P-32 3 Cr-51	2.678+10 1.651 0.008+00 0.001	+09 1.04 X +09 +00 4.15 X +04	0.001+00 2.311+04		0.00X+00 5.93X+04	2.25X+09 8.97X+06	
	4 Hn-54 5 Te-59	0.00I+00 9.911 4.18I+07 9.761		0.00I+00 0.00I+00		0.001+00 3.088+07	2.03X+07 2.31X+08	
	6 Ca-57	0.002+00 1.60	•	0.00X+00	• •	0.00X+00	2.98E+07	
	7 Co-58 8 Co-60		+06 1.428+07	0.001+00	0.001+00		8.511+07 2.461+05	
	9 Za-65 10 Zb-85	1.511+09 5.231		0.001+00	3.341+09	0.001+00	2.211+09	1
	•	•	• • •		0.00I+00	P	.5.91 1 +08	
•	11 Sr-89 12 Sr-90	2.141+89 0.001 4.471+10 0.001	+00 1.101+10			0.001+00 0.001+00		•
	13 T-91 14 Tr-95	1.291+03 4.081	+00 3.358 +02 +02 2.818 +02	0.00 1 +00	5.00E+02	0.003+00 0.001+00	5.11X+08 9.42X+05	
	15 II 6-95	1.161+05 6.41	+04 3.538+04	9.00I+00	6.218+04	0.001+00	2.748+08	į
	16 Kb-97 17 Ko-99	5.131-12 1.271 0.001+00 3.601			1.498-12 8.708+07	0.00I+00 0.00I+00	3.048-08 8.818+07	-
.	18 Tc-99#	4.902+00 1.371 1.472+03 0.001	+01 - 1.771+02	0.001+00	2.041+02	7.59I+00 0.00I+00	8.96X+03 1.23X+05	
	20 Ru-106	2.031+04 0.001	+00 3.328+03	0.001+00	5.08E+04	0.001+00	1.261+06	
		6.878+07 6.50				0.001+00	1.631+10	
	23 56-125	0.001+00 0.001 0.001+00 0.001	+00 . 0.00X+00	. 0.00X+00	0.001100.0	00+100.0	0.001+00 0.001+00	
		9.061+07 - 3.36				0.001+00 0.001+00	1.58X+08 3.40X+08	•
· ••	26 I-131	4.578+08 8.39	+08 3.431+08	1.871+11	1.108+09	0.00I+00	1.261+08	•
	27 I-133 28 Cs-134	8.011+08 1.92 6.761+09 1.59				0.001+00 1.931+09	7.711+06 1.981+08	:
	29 Ce-136 30 Ce-137	3.808+08 - 1.50 9.058+09 - 1.20	+09	0.001+00	8.158+08	1.261+08	1.201+08 1.711+08	
		4.128+07 - 5.85		• •	•••	3.391+04	6.351+07	
·	32 La-140	6.691+00 3.39	10- 110.01	0.00E+00	0.001+00	0.00E+00	1.941+05	
	33 Ce-141 34 Ce-144	7.328+03 4.89 4.678+05 1.93					1.40 1 +07 1.17 1 +08	
	All such	des (except I-3) (alcolated per	ODCM equation	n 2.3-24	·		:

. .

.

ŕ

Bea	ver Valle	v Pov	ver S	Static	n		Pro	cedure Nur		
		,			· · ·		Uni		/2-ODC-2.02 Level Of Use:	
neres 1 - La constante de	,							1/2	In-Field Reference	
DCM: GASEOU	IS EFFLUENT	S					Rev	ision:	Page Number:	
		<u> </u>	•					1	102 of 128	
				-	IENT J					
	•	,		ge 14 c						
		P&I	ORGA	N DOS	SE FAC	TORS				
					•					
				Table 2.3-1	5					
					VALLEY SITE					
•									-	
			(sg nete	r-sres/jr p	er wCi/sec)					
	Pathway = Age Group					•				
	•									
	Fuelide	Bone	Liver	T. Body	Thyrold	Lidoey	Lang	CI-LLI		
	1 H-3 2 P-32	0.00E+00 6.59E+10	1.57E+03 3.09E+09	1.57 8+03 2.54 8 +09	1.57 1 +03 0.00 1 +0 0	1.57E+03 0.00E+00	1.57E+03 9.00E+00	1.57E+03 1.62X+09		
	3 Ce-51	0.001+00	0.001+00	8.468+04	4.701+04	1.288+04	8.58I+04			
	4 Hn-54 5 Fe-59	0.00E+00 9.70E+07	1.48 1 +07 1.57 1 +08	3.95E+88 7.82E+87	0.002+00 0.002+00	4.15E+06 0.00E+00	0.00I+00 4.55I+07	1.24 1 +07 1.63 1 +08		
		•		•						
	6 Co-51 7 Co-58	0.00E+00 0.00E+00	2.73I+06 9.43I+05	5.52 I+06 2.89 I+ 07	0.00I+00 0.00I+00	0.00I+00 9.00I+00	0.00I+00 0.00I+00	2.241+07 5.501+07		
	8 Co-60	0.001+00	2.948+07	8.578+07	0.00E+00	8.00I+00	0.002+00	1.631+08		
	9 Za-65 10 Rb-86	2.958+09 0.008+00	T.87 6 +09 T.40 8 +09	(.698+09 (.558+09	0.00E+00 0.00E+00	4.96I+09 0.00I+00	0.00I+00 0.00I+00	1.38 8+0 9 4.76 8 +08		
	11 Sr-89	5.298+09	0.00 E +00	1.518+08	8 00E+08	8.00I+00	0.002+00	2.051+08		
	12 Sr-90	7.558+10	0.002+00	1.912+10	0.00E+00	0.002+00	0.001+00	1.021+09		
	13 Y-91 14 Zr-95	3.08E+04 3.00E+03		8.248+02 5.888+02	0.00 I +00 0.00 I +00	0.002+00 9.452+02	0.00I+00 0.00I+00	4.111+06 6.891+05		
	15 Fb-95	2.611+05			0.001100.0	9.548+04	0.001+00	1.681+08		
	16 Rb-97	1.258-11	2.258-12	1.05 1 -12	0.00I+00	2.508-12	0.001+00	6.94E-07		
	17 Mo-99	0.00E+00	6.92 1 +07	1.718+07	0.002+00	1.481+08	0.001+00	5.728+07		
•	18 Tc-99n 19 Ru-103	1.128+01 3.498+03		3.658+02 1.348+03		3.20I+02 8.78I+03	1.128+01 0.008+00	1.25 1 +04 9.01 1 +04		
	20 Ru-106	6.49X+04		8.10E+03	0.001100	8.751+04	0.002+00	1.911+05	 .	
	21 Ag-110m	1.498+08		8.058+07		1.872+08	0.00E+00	1.208+10		
	22 Sb-124 23 Sb-125	0.00E+00 0.00E+00	0.002+00	0.00X+00 0.00X+00	0.002+00	0.00I+00 0.00I+00	0.00X+00	0.00X+00 0.00X+00	· .	
	24 Ta-127a	1.561+08	4.218+07	1.861+07	3.748+07	· 4,468+08	0.00E+00	1.278+08		
	25 Te-129m	2.23 1 +08	6.241+07	3.471+07	7.201+07	· 6.568+08	0.00E+00	2.728+08		
	26 I-131	1.118+09			3.661+11		0.00I+00	9.921+07		
	27 I-133 28 Cs-134	1.46 8 +07 1.55 8 +10			3.361+09 0.002+00		0.00X+00 2.85X+09	7.28I+06 1.38I+08		
	29 Ce-138	8.581+08	2.361+09	1.538+09	0.001+00	1.261+05	1.871+08	8.291+07		
	30 Ce-137	2.185+10	2.098+10	3.052+09	0.002+00	6.50I+09	2,451+09	1.312+08		
	31 Ba-140	9.941+07			0.002+00	2.841+04	5.198+04	5.042+07		
	32 La-140 ·	1.658+01	5.778+00		8.00 2+09	0.001+00	0.002+00	1.61 1 +05		
	33 Ce-141	1.602+04	8_991+03	` 1.34 8 +04	6.00X+00	3.94 K +03	0.001+00	1.128+07		

. ساليا

E-3 calculated per ODCH equation 2.3-28

. .

. . . .

Title:	Beaver Val			· · · ·	••• · •	Unit		/2-ODC-2.02 Level Of Use:
• • •							1/2	In-Field Referen
ODCM: GA	SEOUS EFFLUE	NTS				Revi	sion:	Page Number:
· · ·	·	 	TACHM	TANK T	·		1	<u>103 of 128</u>
			Page 15 c					
		P&I ORC			TORS			
		101.0100						
			- Table 2.3-1					•.
			· • ·					
			IS FOR BLAVER	-				
		₁₁₁₀ (89.1	eter-mrem/yr p	er wCi/sec)				
		y = Cow Hilk oup = Infant			1.2.1			
	Mge ar	•		When 12	T ()	 T	si-lli	
		•	ir I. Body	Thyrold	Lidney	Less		
	1 E-3 2 P-32	- 0.001+00 2.381+ 1.361+11 7.991+)3 2.381+03 19 5.278+09	2.381+03 0.001+00		2.381+03 0.001+00	2.381+03 1.848+09	
	3 Cr-51 4 Ma-54	0.001+00 0.001+ 0.001+00 2.761+		8.75I+04 0.00I+00		1.70 1 +05 0.00 1 +00	3.91 1 +08 1.01 1 +07	
	5 Te-59	1.81E+08 3.16E+		0.001100		9.358+07	1.511+08	
•.	6 Co-57	0.001+00 6.361+				0.001+00	2.178+07	
	- 7 Co-58 8 Co-60	0.00I+00 21.89I+ 0.00I+00 36.00I+		0.00I+00 0.00I+00		0.00E+00 0.00E+00	4.78 1 +07 1.43 1 +08	
	9 In-65 10 Ib-86	3.97E+09 1.36E+ 0.00E+00 1.88E+		0.001+00		0.00X+00 0.00X+00	1.151+10 4.811+08	
	11 Sr-89			0.001+00		0.001+00	2.078+08	
-	12 Sr-90	- 8.22E+10 0.00E+	80 2.891+08 80 2.091+10	0.001100.0	0.001+00	0.001100.0	1.031+09	
	13 Y-91 14 Zr-95	5.791+04 0.001+ 5.331+03 1.301+				0.001+00 0.001+00	4.158+06 8.478+05	
	15 Hb-95	4.878+05 2.018+	05 1.168+05	0.001100	1.441+05	0.00E+00	1.691+08	
	16 Wb-97	2.638-11 5.628- 9.008+00 1.778+	12 2.038-12	0.001100.0	4.391-12	0.00X+00	1.778-06 5.831+07	
	18 Tc-991	2.341+01 * 4.821+	01 6.21E+0 2	0.001100.0	5.19I+02	2.52E+01	1.401+04	
	19 Au-103 20 Au-106	1.34I+03 0.00I+ 1.34I+05 `0.00I+						
	21 ke-110	a 2.758+08 2.018+	05 1. 338+08 -	0.001+00	2.881+08	0.00E+00	1.042+10	
	22 Sb-12	L 0.001+00 0.001+	00 0.00E+00	· 0.001+00	0.00I+00 ·	0.001+00	0.001+00 0.001+00	
	24 Te-12	m 3.16X+08 1.05X+	08 - 3.83X+07 -	9.141+07	7.79I+06	0.00E+00	1.261+08	
	25 Te-12	}æ ∻{4.58£+08 ``1.57£+					2.741+08	
- - -	26 I-131 27 I-133	2.311+09 2.721+ 3.081+07 - 4.491+					9.721+07 7.601+06	
	26 Ca-13	2.518+10 4.698+	18 4.731+09	0.001+00	1.218+10	4.958+09	1.278+08	
	29 Cs-13 30 Cs-13	8 1.68X+09 4.93X+ 7 3.48X+10 4.07X+					7_491+07 1.271+08	
	31 Ba-10	2.051+08 2.051	05 -01.05E+07	0.001+00	4.651+04	1.261+05	5.021+07	
	- 32 La-14	0 3.458+01 1.368 1 3.578+04 4.2.188	01 3-3.50E+00	0.001100.0 *	0.001+00	0.001+00	1.601+05	
		4 1.65 1 +04 7 2.1864						

Beave	r Valley P	ower Stati	on	Procedure Nu	
ītle;	<u> </u>			Unit:	1/2-ODC-2.02
•••••	· . ·			1/2	In-Field Reference
	EET TIENTEO			Revision:	Page Number:
DCM: GASEOUS E	LLUEN12			1	104 of 128
		ATTACHI	MENT I		
		Page 16			
				_	
	Pð	21 ORGAN DO	SE FACTORS	S .	
•					•
		Table 2.3	-17		
		R VALUES FOR BEAVE	R VALLET SITE		
		(sq meter-area/pr	per uCl/sec)		•
	Pathway = Goat Hil	lt	<i>.</i>		
	Age Group = Adelt			·	
	Buclide Box	e Liver T. Body	Thyroid Lidney	Long GI-LLI	
• .	1 I-3 0.00E+6	0 1.568+03 1.568+03	1.561+03 1.561+03	1.562+03 1.562+03	}
	2 2-32 1.741+1				
	3 Cz-51 0.00EH				
	4 Ma-54 0.001+(5 Fe-59 3.121+(
		•			
,	8 Co-57 0.002+4 7 Co-58 0.002+4	00 1.098+05 1.828+05 00 4.408+05 9.868+05			
:	8 Ca-58 0.001+				
	9 Za-65 1.16X+	08 3.74 8 +08 1.69 8 +08	0.00X+00 2.50X+08	0.002+00 2.362+08	
	10 Pb-86 0.00I+	09 2.631+08 1.221+08	0.001+00 0.001+00	• •.00X+09 5.18X+01	I
•	11 Sr-89 2.431+	0.00E+00 6.99E+07	0.001+00 0.001+00	0.002+00, 3.91E+08	}
. •	12 Sr-90 6.648+	10 0.00E+00 1.63E+10	9.00E+00 0.00E+00	0.001+00 1.921+05	_
	13 T-91 8.14E+				
	14 Zr-95 8.87EH 15 Wb-95 8.13EH	01 2.85X+01 1.93X+01 03 4.52X+03 2.43X+03			_
	16 Kb-97 3.38K-				
		00 2.53 E+06 4.81E +05 01 9.59 E-01 1.22E+01			
*		01 - 0.00X+00 - 4.29X+01	0.00E+00 3.80E+02	0.00E+00 1.16E+0	
••	20 Ru-105 1.728+			0.003+00 1.118+0	5
:	21 Ag-110m 4.99E+	06 - 4.61I+06 2.74I+06	. 0.00E+00 9.07E+01		3
	22 Sb-124 0.00IH		_		
	23 Sb-125 0.00E+	00 0.001+00 0.001+00) 0.00E+00 Ó.00E+0(0.00E+00 0.00E+0	0
		06 1.48I+06 5.03I+0			-
	25 Te-129 5.948+	vo 2.228100 J.41810	5 2.042+05 - 2.482+01	[0.00 I+00 2.9 9 I +0	1
t the		08 - 4.32E+08 - 2.48E+00			
		06 . 6.872+06 2.092+0			
		10-1 2.05E+10 1.34E+1			
					· · · ·
·.					
		04 1.27E+04 1.64E+0			
			UNCE EQUATION 7.3-24		
. .	26 I-131 3.028+ 27 I-133 3.958+ 26 Ce-134 4.678+ 29 Ce-136 6.708+ 30 Ce-137 1.508+ 31 Ba-140 2.748+ 32 La-140 4.608- 33 Ce-141 4.798+ 34 Ce-144 3.051+ All unclides (ezc 4.20	08 4.32E+08 2.48E+01 08 6.87E+08 2.09E+01 08 1.11E+09 9.09E+01 08 2.85E+09 1.90E+02 10=7 2.05E+10 1.34E+11 06 3.44E+03 1.79E+02 01 2.32E-01 6.13E-02 02 3.24E+02 3.65E+0	1.42E+11 7.40E+04 1.01E+09 1.20E+04 0.00E+00 3.60E+04 0.00E+00 1.47E+05 0.00E+00 1.47E+05 0.00E+00 1.17E+05 0.00E+00 1.17E+05 0.00E+00 1.17E+05 0.00E+00 1.17E+05 0.00E+00 1.51E+05 0.00E+00 1.51E+05	0.001+00 1.141+0 7 0.001+00 6.171+0 5 1.191+08 1.951+0 9 2.021+08 3.011+0 9 2.311+09 3.961+0 3 1.971+03 5.841+0 0 0.001+00 1.701+0 2 0.001+00 1.241+0	8 6 7 8 8 8 6 4 6

•

Bea	aver Valley	Power Sta	tion	· · · ·	·	dure Num	/2-ODC-2.0	2
Title:					Unit		Level Of Use:	
	5 .					12	In-Field R	eferenc
ODCM: GASEO	US EFFLUENTS			• •	Revi	ion:	Page Number:	
			Th (TENET) I			11	105.0	128
			HMENT J					
	•	E Page 1 P&I ORGAN D	•	TODO				
	· 1	Fai ORUAN L	OSE LAC	1042				
1							1	•
		Table	2.'3-16					
		.	IVER VALLET SIT	,				
								-
•		(sq neter-nres	/yr per wCi/sec	}				
	Pathway = Goat							
	Les Group = Tee	5	•					
	Wuclide	Bone Liver T. I	ody Thyroid	Lidney	Long	GI-LLI		
	1 E-S 0.00		+03 2.038+03	2.031+03	2.031+03	2.03 I +03		
	2 ₹-32 3.21 3 Cr-51 0.00		+09 0.00I+00 +03 2.77E+03	0.001+00 1.091+03	0.001+00 7.112+03	2.701+09 8.371+05		
	4 km-54 0.00	I+00 1.19I+06 2.36I	+05 - 0.00 E +00	3.551+05	0.00I+00	2.441+06		
	5 Je-59 5.41	I+05 1.27I+06 4.901	+05 0.00E+00	0.001100	4.001+05	3.001+06		
	6 Co-57 0.00	E+00 1.92E+05 3.211		0.00X+00	0.008+00	3.578+06		
		8+00 7.408+05 1.711 8+00 2.278+06 5.111	(+060.00 1 +00	0.00I+00 8.00I+00	0.001+00 0.005+00	1.02X+07 2.98X+07		
	9 28-65 1.81	I+08 6.27E+08 2.93	00+200.0 80+	4.01E+05 0.00E+00	0.001+00 0.001+00	2.661+08 7.091+07	x	
	10 Rb-86 0.00	18+00 4.798+08 2.251	1+08 0.001+00	0.001100		1.038441		
•		I+09 0.00I+00 1.29 I+10 0.00I+00 2.32		0.00X+00 0.00X+00	0.001100.0 0.001100.0	5.35I+08 2.64I+09		
		E+03 . 6.00E+00 -4.01		\$.00E+00	0.002+00	6.142+05		
	14 Zr-95 1.5 15 Kb-95 1.3	11+02 4.901+01 3.37 11+04 7.691+63 4.23		7.19X+01 7.45X+03	0.00X+00 0.00X+00	1.13I+05 3.29I+07		
			• • • •		A 1			
		il-13 1.531-13 5.57)1+00 4.561+06 8.70				3.651-09 8.171+06		
		18-01 -1.641+00 - 2.13 18+02 - 0.001+00 - 7.56				1.08I+03 1.48I+04		
	20 Ru-106 2.4	1+03 0.001+00 3.98	E+02 0.00E+00	6.10X+03	0.001+00	1.521+05		
[21 Ag-110a 8.2	1.75	E+86 0 80E+00		0.002+00	2.19 5 +09		•
	22 Sb-124 0.0)X+00 0.00X+00 0.00	E+00 0.00E+00	0.001200.0	-0,00X+00	0.001+00		
	23 \$b-125 \0.0 24 Te-127m	12+00 0.001+00 0.00 11+06 2.701+06 5.05	L+00 0.00E+00 E+05 1.B1E+08	0.001+00 * 3.081+07	0,001+00	0.001+00 1.901+07		
t the	25 Te-129m 1.0	91+07 4.031+06 1.72	1+06 3.511+06	4.558+07	0.00X+00	4.051+07		
	26 1-131 5.4	SE+08 7.67E+08 4.12		1.321+09	0.00 1+0 0	1.521+08		
	27 I-133 7.2	11+06 🕺 1.221+07 📜 3.73	I+06 1.71I+09	2.151+07	0.00I+00	9.261+06		
	29 Ce-136 1.1	18+08 1.918+09 8.86 (8+09 4.498+09 3.02	1+09 0.001+00	2.448+09	2.328+08 ·3.658+08	2.38E+07 3.61E+08		
1	30 Cs-137 2.7	18+10 3.618+10 1.26	E+10 0.00E+00		4.771+09	5.141+08		
	JI Ba-140 4.9	E+06 6.06E+03 3.18	I+05 1 0.00E+00	2.058+03	4.071+03	7.621+06		
	32 La-140 8.2	78-01 4.068-01 1.08 98+02 5.878+02 6.74	I-01 (0.00I+00	0.00E+00	0.001+00	2.331+04 1.681+06		
Į		0I+04 2.32I+04 3.01				1.418+07		
	411	except H-3) calculated						

1. .

•

Beaver Valley Power Station								Рго	Procedure Number:		
									<u>1/2-ODC-2.02</u>		
Title: ODCM: GASEOUS EFFLUENTS								Uni	с 1/2	Level Of Use: In-Field Reference	
								Re	112 rision:	Page Number:	
									1	106 of 128	
				ATI	ACHIN	IENT J					
		•			age 18						
			P&I		N DOS		TORS	l			
				01(01			- 010				
					Table 2.3-	19					
				R VILORS	FOR BEAVER		t				
				(sq net	er-sres/jr j	per uCi/sec	j				
		Pathwaw =	Goat Hilk								
		Age Group					.`				
•		Faclide	Boas	Liver	T. Body	Thyroid	Lidney	Lung	gi-lli		
		1 I-3	0.001+00		3.201+03	3.202+03	3.201+03	3.201+03	3.201+03		
	· .	2 P-32 3 Cr-51	7.91 E +10 0.00 E+0 0		3.05E+09 1.02E+04	0.00I+00 5.64I+03	0.00E+00 1.54E+03	0.008+00 1.038+04	2.19 1 +09 5.39 1 +05		
	• •	4 25-54	0.001+00	1.781+06	4.741+05	0.00I+00	4.991+05	0.001+00	1.492+06		
	· . ·	5 Ye-59	1.251+06	2.041+06	1.021+06	0.001+00	0.001+00	5.918+05	2.171+06		
		6 Co-57	0.001+00	3.278+05	8.63E+05	0.002+69	0.002+00	0.001100.0	2.681+06		
	•	7 Co-58 8 Co-60	0.00E+00 0.00E+00	1.138+06 3.538+06	3.46 1 +06 1.04 1 +07	0.00I+00 0.00I+00	0.00E+00 0.00E+00	0.001+00 0.001+00	6.601+06 1.952+07		
		9 Za-65	3.548+08	9.442+08	5.878+08	0.001+00	5.952+08		1.651+08		
		10 Rb-86	0.002+00	8.881+08	5.46X+08	0.00E+00	0.001+00	0.001+00	5.718+07		
•		11 Se-89	L.118+10	0.002+00	3.175+05	0.005+00	0.002+00	0.001+00	4.301+08		
	-	12 Se-90 13 T-91	1.598+11 3.708+03	0.001+00	4.02E+10 9.89E+01	0.00E+00 0.00E+00	0.00E+00 0.00E+00		, 2.148+09 4.938+05		
		14 Ir-95	3.60I+02	7.921+01	7.05X+01	4.00E+00	. I. 13E+02	0.002+00	8.271+04		
		15 F b-95	3.131+04	1.221+04	8.71X+03	0.001+00	1.148+04	0.001+00	· 2.258+07		
		16 Eb-97	1.498-12		1.268-13	0.001+00			8.338-08		
		17 Bo-99 18 Te-99n	- 0.001+00		2.051+06 4.391+01		1.778+07		6.878+06		
	• •		4.181+02			· 0.001+00		0.001+00	1.51 1+03 1.08 1+04		
		20 Ru-106	· 7.791+03	0.00E+00	9.72E+02	0.00I+00	1.05 E+04	0.00 £+0 0;	1.218+05		
		21 Ag-110m	1.791+07		9.65X+06		2.25E+07	0.001+00	1.44 1 +09		
	•	22 56-124			0.002+00,				0.002+00		
	÷ .	23 50-125 24 Te-127a		0.001+04 5.051+06	0.00E+00		0.001+00 5.351+07	0.001+00 0.001+00	0.00E+00 1.52E+07		
		25 Te-129a	2.663+07	7.481+06	4.168+06		7.87E+07	0.001+00	3.278+07		
T the		26 I-131	1.338+09	1.348+09	7.60X+06	4.428+11	2.19 8 +09	0.008+00	1.19 E +08		
	· · · · · ·	27 [-133	1.758+07	2.178+07	8.20X+06	4.03X+09	3. \$11+0 7	0.001+00	8.73E+06	· ·	
		25 Ca-134			8.48Z+08		. 9.52E+08	3.428+08	1.661+07		
		29 Ca-136 30 Ca-137			- 4.581+09; 9.241+09			5.62 1 +08 T.34 1 +09	Z. 49X+08 3.92X+08		
	•	1				· · ·	•••				
		31 Ba-140 32 La-140			6.96X+05 2.33X-01			8.23E+03 8.00E+08	6.04 E+06 1.93 E +04		
	· ·	33 Ce-141	2.158+03	, 1.082+03	1.501+03	0.001+00	4.731+02	0.001+00	1.351+06		
	•	34 Ce-144	1.388+05	4.331+04	7.378+03	0.001+00	2.401+04	0.001+00	1,138+07		
							2.3-24				

L

11	Beave	valle	y Power	Station		· · .	1/2-ODC-2.0	2
Title:						Unit:	Level Of Use:	- 6
-						1/2 Revision:	In-Field R Page Number:	elerenc
DCM:	GASEOUS E	FFLUEN	ſS			1 KCVISION:	107.01	128 -
			<u>'АТ</u>	FACHMENT		•	<u> </u>	
				age 19 of 19				
·				AN DOSE FAC	TORS	-	• . •	
		·					•	
	•						·	
	-	• • • •						
	·.		1 e				•	
				• • •				
				Table 2.3-20				
	• • •		R VALUE	S FOR BEAVER VALLEY SIT	1	;		
	~				• •			-
	· • •	`	(sq be	ter-area/yr per aCi/sec	:)			
		Pathway = Age Group		•				
			÷		•	• •		
		Muclida	Bone Liver	T. Body Thyrold	Kidney	Leag GI	-LLI	
		[[-]	0.002+00 4.862+05			SE+03 4.86		
	<u> </u>	2 P-32 3 Cr-51	1.631+11 9.591+09 0.001+00 0.001+00	6.321+09 0.001+00 1.611+04 1.051+04		108+00 _2.21 148+04 _4.89		
	• *	4 Ku-54 5 Fe-59	0.001+00 3.311+06	7.501+05 0.001+00	7.331+05 0.0	0E+00 1.21		
	-	2 14-22	2.351+06 4.111+06	1.628+06 0.008+00	0.00I+00 1.1	211+06 1.96	4100	
•		6 Co-57 7 Co-58	0.00I+00 7.64I+05 0.00I+00 2.26I+06	1.241+06 0.001+00 > 5.641+06 0.001+00		08+00 2.60 08+00 5.64		
		8 Ca-60	0.001+00 1.201+06	1.761+07 0.001+00	0.002+00 0.0	08+00 1.71	E+07	
	· · · · · · · · · · · · · · · · · · ·	9 Za-65 10 Kb-86		7.531+08 0.001+00 1.111+09 0.001+00	7.921+08 0.0 0.001+00 8.0	XXX+00 1.38 XXX+00 5.77	1	
•	•	NE C- 40			· • • • • • • • • • • • • • • • • • • •			
		11 Sr-89 12 Sr-90	2.11I+10 0.00I+00 1.73I+11 0.00I+00			01+00 4.34 01+00 2.16	·	
	• :	13 T-91 14 Zr-95	5.94I+03 0.00I+00 6.40I+02 -1.56I+02		0.00E+00 10.0 1.68E+02 10.0			•
	· · · · ·	15 Tb-95	5.848+04 2.418+04			0E+60 2.03	• • •	
	-	16 Kb-97	3_168-12 6 741-13	2.431-13 0.001+00	5.271-13 0.0	00 8 +00 2.13	1-07	•
	200 - 200 200	- 17 Ho-99	0.001+00 2.121+07	4.143+06 . 0.005+00	3.178+07 0.0	00 E+00 6.9 9	I+06	• .:
	•	18 Tc-99a 19 Ru-103	8.478+02 - 0.008+00		1.78E+03 0.0	00 1 +00 1.03	8+04	
		20 Ru-106	1.602+04 0.002+00			001+00 1.22	1+05	
	.	21 Ag-110n		1.601+07 0.008+00				
		22 Sb-124 23 Sb-125	0.001+00 0.001+00 0.001+00 0.001+00				E+00 \$+00	*
	,*, .1	23 Sb-125 24 Te-127a	3.80E+07 3.1.26E+01	4.591+06 1.101+07	9.351+07 0.0	00X+00 1.53	12+07	
		· 25 Te-129a	5.50E+07 . 1.89E+01	•	;		. `	i
- 1 2	· .	26 I-131 27 I-133	2.TTE+09 3.2TE+09	1.4(I+09 1.07I+12 1.56I+07 9.80I+09		00E+00 1.17		•
	•••	28 Ca-134	3.028+09 5.628+09	5.681+08 0.001+00	1.458+09 5.	938+08 1.53	12+07	
	•	29 Cs-136 30 Cs-137		5.528+09 0.008+00 8.668+09 0.008+00		21X+09 2.2 33X+10 3.8	iX+08 2 I +08	;
	•	•			.;	,		`
		31 Ba-140 32 Ga-140	2.45E+07 2.45E+04 4.14E+00 1.63E+00	i 1.261+06 0.001+00 } 4.191-01 0.001+00	5.838+03 1. 0.008+00 0.			
	4	- 33 Ce-141	4.291+03 2.621+0	3.081+02 0.001+00 1.111+04 0.001+00	8.071+02 0.	001+00 1.3	58+06	
		:	· · · · ·	• •	·	VATAN 1.1	LATVI	Ŧ
			ides (except H-3) cali ilated per ODCH equati	ulated per ODCM equation 2 3-25	en 2.3-24			-
		;			,	,		
	· . ·	·						
		•			н. 1			,

;

: 3

••••••

SECTOR N	0.0 - 0.5	Č			ON PARAM ES >500 HR (meters ⁻²)	S/YR OR >1)) FOR 50 HRS/QTF	ર				ODCM:	•
				JS RELEAS.	ES > 500 HR (meters ⁻²)	S/YR OR >1	50 HRS/QTI	र					1
	00.05		: <u>.</u>	4	(meters)			-				GASEOUS	•
			÷ _								0	SE	•
			• .	•	<i></i>		• .• .				Öğ	18	
			DIST	ANCES TO	THE CONT	ROL LOCA	TIONS, IN M	MILES			NTI		
		0.5 - 1.0	1.0 - 1.5	1.5 - 2.0	2.0 - 2.5		3.0 - 3.5	3.5 - 4.0	4.0 - 4.5	4.5 - 5.0	ATTACHMENT K Page 1 of 7 CONTINUOUS RELEASE DEPOSITION PARAMETERS (0-5	EFFLUENTS	•
N		<u> </u>	· · ·			·	· · · · · · · · · · · · · · · · · · ·		•		nc	Ğ	
	6.00E-10	8.60E-09	3.14E-09	1.76E-09			4.24E-10	3.29E-10	\2.63E-10	2.15E-10	SR.	Z	
NNE	6.66E-10	5.64E-09	1.98E-09	2.55E-09		1.07E-09		5.23E-10	4.56E-10	3.74E-10	E	S	
NE	1.03E-09	1.57E-09	1.32E-09	3.62E-09	2.03E-09	1.64E-09	1.23E-09	6.13E-10	7.85E-10	6.42E-10	È EA		
ENE	1.13E-09	1.55E-09	3.69E-09	3.27E-09	2.31E-09	1.29E-09	1.21E-09	6.78E-10	6.72E-10	3.89E-10	SE		
E	1.35E-09	1.28E-08	4.09E-09	3.12E-09	1.91E-09	1.36E-09	1.01E-09	7.83E-10	4.15E-10	5.10E-10	DI		
ESE	9.82E-10	7.85E-09	4.40E-09	2.46E-09	1.47E-09	1.03E-09	5.65E-10	5.05E-10	3.25E-10	3.00E-10	ATTACHMENT Page 1 of 7 DEPOSITION F	[
SE	2.76E-09	6.41E-09	3.52E-09	1.97E-09	1.18E-09	8.27E-10	5.68E-10	4.40E-10	2.93E-10	2.43E-10	HIME e 1 of SITIO	ł	
SSE	2.22E-09	4.66E-09	3.01E-09	1.68E-09			•	3.29E-10	2.19E-10	1.80E-10			
S ·	3.00E-09	4.81E-09	3.76E-09	2.10E-09	1.36E-09	9.52E-10	5.12E-10	3.96E-10	2.68E-10	2.20E-10		ľ	
SSW	1.44E-08	2.89E-09	7.83E-10	8.84E-10	5.70E-10	4.00E-10	2.55E-10	1.98E-10	1.84E-10	1.51E-10	Ă K	1	
SW	1.89E-08	5.55E-09	1.55E-09	8.71E-10	2.61E-10	3.94E-10	1.57E-10	2.50E-10	2.54E-10	2.08E-10	RAN		
wsw	1.57E-09	6.63E-09	1.36E-09	1.04E-09	5.44E-10	· 2.39E-10	3.84E-10	2.98E-10	2.17E-10	1.78E-10	IET		
W	3.78E-10	2.95E-09	1.84E-09	1.04E-09	6.63E-10	4.66E-10	1.37E-10	2.98E-10	1.12E-10	1.75E-10	ER		~
WNW	4.54E-10	4.13E-10	3.09E-10	4.71E-10	7.35E-10	5.16E-10	1.93E-10	1.10E-10	1.12E-10	1.80E-10	S (levis L	
NW	4.52E-10	4.09E-10	2.86E-10	1.18E-09	7.04E-10	4.94E-10	3.37E-10	2.10E-10	2.09E-10	1.71E-10	Γ Ο		5
NNW	3.40E-10	2.05E-09	1.63E-09	9.12E-10	5.86E-10	4.13E-10	2.79E-10	2.16E-10	1.73E-10	1.42E-10	- •		
·													~~~~
							•				MILES)	In-Field Page Number: 108 c	
												上前	1 5
													: 2
											1	in-Field Reference e Number: 108 of 128	1
													•

				Т	ABLE 2.3-2	22						ODCM:
						RAMETERS						N. C
		Ċ	ONTINUOU	IS RELEASE	$\frac{1}{2}$ (meters ²)	S/YR OR >1:	50 HRS/QTH				:	GA .
				•	(motors)						ò	SEC
										· · ·	ON NO	GASEOUS
		<u> </u>	DIST	ANCES TO	THE CONT	ROL LOCA	TIONS, IN N	AILES		· · · · · · · · · · · · · · · · · · ·	TIN	
SECTOR	0.0 - 0.5	0.5 - 1.0	1.0 - 1.5	1.5 - 2.0	2.0 - 2.5	2.5 - 3.0	3.0 - 3.5	3.5 - 4.0	4.0 - 4.5	4.5 - 5.0	ATTACHMENT K Page 2 of 7 CONTINUOUS RELEASE DEPOSITION PARAMETERS (0-5	EFFLUENTS
N	4.46E-08	7.73E-09	3.24E-09	1.81E-09	1.08E-09	7.57E-10	5.16E-10	4.00E-10	2.91E-10	2.38E-10	JSI	E
NNE	5.42E-08	9.39E-09	3.37E-09	1.89E-09	1.22E-09	8.54E-10	6.35E-10	4.92E-10	· 3.94E-10	3.22E-10	RE	IS
NE	7.32E-08	1.27E-08	6.21E-09	3.47E-09	2.24E-09	1.57E-09	1.00E-09	7.77E-10	5.69E-10	4.66E-10	EA	Í
ENE	7.77E-08	1.35E-08	6.51E-09	3.64E-09	2.50E-09	1.76E-09	1.31E-09	1.01E-09	6.58E-10	.5.39E-10	SE	
E	6.08E-08	1.05E-08	3.79E-09	2.12E-09	1.37E-09	9.59E-10	6.54E-10	5.06E-10	4.05E-10	3.32E-10		
ESE	3.23E-08	5.60E-09	2.54E-09	1.42E-09	8.46E-10	5.94E-10	4.05E-10	3.14E-10	2.28E-10	1.87E-10	ATTACHMENT Page 2 of 7 3 DEPOSITION I	
SE	3.29E-08	5.70E-09	2.59E-09	1.45E-09	9.32E-10	6.55E-10	4.12E-10	3.19E-10	2.55E-10	2.09E-10	HIMI	
SSE	2.84E-08	4.92E-09	2.06E-09	1.15E-09	6.29E-10	4.42E-10	2.99E-10	2.32E-10	1.85E-10	1.52E-10		
S	3.67E-08	6.37E-09	2.26E-09	1.26E-09	8.14E-10	5.71E-10	3.86E-10	2.99E-10	2.39E-10	1.96E-10	T K PA	
SSW SW	2.61E-08 3.06E-08	4.52E-09 5.30E-09	1.60E-09 2.62É-09	8.97E-10 1.47E-09	5.78E-10 8.01E-10	4.06E-10 5.62E-10	3.02E-10 4.18E-10	2.34E-10 3.24E-10	1.70E-10 2.35E-10	1.39E-10 1.93E-10	IR.	l
2.0	5.005-00	J.JUE-09	2.022-09	1.4712-09	8.01E-10	5.022-10	4.186-10	5.242-10	2.55E-10		AMI	·.
wsw	4.60E-08	7.97E-09	3.34E-09	1.87E-09	1.20E-09	8.45E-10	5.87E-10	4.55E-10	3.38E-10	2.77E-10	ITE	
W	6.49E-08	1.13E-08	4.72E-09	2.64E-09	1.19E-09	8.36E-10	6.22E-10	4.82E-10	3.85E-10	3.15E-10	RS	Revis
WNW	9.25E-08	1.60E-08	6.43E-09	3.60E-09	2.21E-09	1.55E-09	1.16E-09	8.96E-10	5.79E-10	4.75E-10 6.41E-10	6	1/2 Revision:
NW NNW	1.19E-07 5.22E-08	2.07E-08 9.04E-09	8.68E-09 3.79E-09	4.86E-09 2.12E-09	2.99E-09 1.28E-09	2.10E-09 9.00E-10	1.56E-09 6.25E-10	1.21E-09 4.84E-10	7.83E-10 3.59E-10	0.41E-10 2.94E-10	-5 N	
1	5.220.00	9.0 4 L-09	51172 07	2.126-07	1.2012-07	J.00L-10	0.232-10	4.042-10	5.575-10		MII -	
		•									1ILES)	In-Field Page Number: 109 (
	•											In-Field to Number 109
												In-Field Reference e Number: 109 of 128

Beaver Valley	Power St	ation	•	Procedure N Unit:	1/2-ODC-2.02 Level Of Use:	· · ·
DCM: GASEOUS EFFLUENTS			,	1/2 Revisioa: 1	In-Field Re Page Number: 110 of	
CONTINUOUS RE	Pag	CHMENT ge 3 of 7 OSITION P		ERS (0-5		
	TAE	BLE 2.3-23				
VV-1 AND V CONTINUOUS	S RELEASES					
	Same a	s Table 2.3	9-22			
_ `	· · ·					
		<u>:</u> -	12			
			•			
•						
:				-		
- 						·
			· . ·			
•				-		

. . .

•

:

•

,

:

:

L

· · ·	Beaver Valley	y Po	wer Station		Procedure N	umber: 1/2-ODC-2.02	2
Title:					Unit: 1/2	Level Of Use: In-Field R	. ·
ODCM: GA	SEOUS EFFLUENT	S			Revision: 1	Page Number:	128
			ATTACHMENT K		··		
	•		Page 4 of 7				
	CONTINUOUS R	ELEA	SE DEPOSITION PAI	RAMETI	ERS (0-5 I	MILES)	
			TABLE 2.3-24				
	·	-					
			SITION PARAMETER				
		JS RE	LEASES >500 HRS/Y (meters ⁻²)	R OR > 1	150 HRS/Q)TR	:
			(meters)				
			Same as Table 2.3-2	2			-
			,				
I _							•
			`				
·							
	•					••	
·	·						
•	-						
						•	
1		•					
						-	
							:

.

÷.,

Į ~. - .

Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-2.02
Tide:	Unit:	Level Of Use:
	1/2	In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number:
	<u> </u>	112 of 128
ATTACHMENT K		
Page 5 of 7		
CONTINUOUS RELEASE DEPOSITION PARAM	METERS (0-5 N	AILES)
TABLE 2.3-25		
CB-2 DEPOSITION PARAMETERS ($\overline{(D/O)}$ FOR	
CONTINUOUS RELEASES >500 HRS/YR O	NK >130 HKS/(ίικ
(meters ⁻²)		
Same as Table 2.3-22		•
· · ·		
· •		
·		
•		
• ,		
T 140		
•		
		-
	•	•

•

•

i J

Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-2.02
Fitle:	Unit: 1/2	Level Of Use: In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 113 of 128
> ATTACHMENT K	4 *	
Page 6 of 7 CONTINUOUS RELEASE DEPOSITION PARAME	TERS (0-5 N	AILES)
TABLE 2.3-26		
DV-2 DEPOSITION PARAMETERS (D) CONTINUOUS RELEASES >500 HRS/YR OR (meters ⁻²)		QTR
Same as Table 2.3-22		
· ·		
• •		•.
		:
· · · · ·		
·		-
		· .
		·····

. :

÷

;

;

)

::

()

.

Beaver Valley Power Station	Procedure Nu	
Title	Unit:	1/2-ODC-2.02 Level Of Use:
		In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revision:	Page Number: 114 of 128
ATTACHMENT K		•
Page 7 of 7		
CONTINUOUS RELEASE DEPOSITION PARAME	ETERS (0-5 M	AILES)
TABLE 2.3-27		
WV-2 DEPOSITION PARAMETERS (I		מידע
CONTINUOUS RELEASES >500 HRS/YR OR (meters ⁻²)	>120 HK2/(ZIK
(meters)		
Same as Table 2.3-22		
		:
	·	
· .		
T the		
		-

: .•

Bea	ver Valley	Power Stat	tion	Pro	cedure Number: 1/2	ODC-2.02
Fitke:		<u></u>		Uni		vel Of Use: In-Field Reference
ODCM: GASEOU	IS EFFLUENTS	5		Rev	ision: Pa 1	ge Number: 115 of 128
·····		ATTACH	IMENT L	· · ·		
		V Page				
CONTINU	JOUS RELEAS	SE DEPOSITION	PARAME	TERS (SPEC	CIAL DIST	TANCES)
			· ·			·
		TABL	E 2.3-28			:
PV-1/2		PARAMETERS OR >150 HRS/Q				
		IFIED IN ATTA				•
			meters ⁻²)		<i>c-J</i>)	
						•
	<u> </u>	INDIVIDUA	LRECEPT	ORS		···· · · · · · · · · · · · · · · · · ·
DOWNWIND	SITE	VEGETABLE	MILK	MILK	MEAT	C
SECTOR	BOUNDARY	GARDEN	COW	GOAT	ANIMA	L RESIDENC
N	.600	2.340		.572	.707	2.510
NNE	.673	3.220		.524	2.920	3.220
NE NE	.766	1.280	.660	.111 -	.660	1.200
ENE	1.010	5.080		.702		1.760
E	1.370	4.420	.401	1.290	1.290	4.420
ESE	.984	6.390		2.340	6.390	6.180
SE	11.000	3.680	.466	.466	1.300	3.680
SSE	7.060	3.220	.423	.105	3.140	4.320
a						0 600
	5.780	1.540	1.410	:	2.610	2.730
	2.040	1.040	.578	.208 (* .693 (*		1.460 1.120
SW . WSW	1.610 1.710	1.120 1.310	.370	.093	.979 1.190	
	1.710	1.510				1.510
W	.377	.659	.138	 `.	.518	.659
WNW		.746	.497 ·	.029	•	.7 46
NW STA	.447	.425		.070 : .		.422
NNW	.340	1.840		.043	.545	1.92
						1
						•

. . . .

5

•

C

.

:

;

;

•

.

:

Be	aver Valley	Power Stat	tion	Pro	cedure Number:	DC-2.02
le:				Un	it: Leve	l Of Use:
	· · · · · · · ·					In-Field Reference
DCM: GASEC	OUS EFFLUENTS			Rc	vision: Page	Number: 116 of 128
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	ATTACH	IMENT L	I		
	•		2 of 7			
CONTI	NUOUS RELEAS	E DEPOSITION	PARAME	TERS (SPE	CIAL DISTA	ANCES)
		TABL	E 2.3-29			
CV-1 AN	D CV-2 DEPOST					ELEASES
		OR >150 HRS/Q FIED IN ATTA	-			
	(IDENT)		meters ⁻²)		2-3)	
		INDIVIDUA	L RECEPT	ORS	<u> </u>	· · · · · · · · · · · · · · · · · · ·
DOWNWIND	SITE	VEGETABLE	MILK	MILK	MEAT	
SECTOR	BOUNDARY	GARDEN	COW	GOAT	ANIMAI	RESIDENCE
N	25.40	2.05	··· ·	.693	.847	2.19
NNE	18.80	2.02		.459	1.850	2.11
NE	63.40	29.30	.455	.078	.455	30.40
ENE	65.90	8.92		.661		32.20
Е	38.00	3.90	.382	1.020	1.020	22.70
ESE	17.10	3.56	**	1.380	3.560	3.56
SE	13.80	3.03	.350	.350	1.100	. 3.03
SSE	10.50	2.65	.317	.094	2.570	3.68
S	10.60	1.05	.934		1.860	1.95
SSW	5.59	1.26	.663	.266	1.260	4.42
SW	3.94	2.21		1.320	1.920	2.21
wsw .	27.50	2.65	.596		2.380	2.65
W	31.60	1.23	.645		.960	1.23
WNW	39.10	2.23	1.490	.045	2.230	2.23
NW	70.60	15.00		.276	1.990	15.60
NNW	31.50 ·	6.52		.068	1.090	9.91
- +-						

. .

:

.1_

:

	Beaver	Valley P	ower Stat	ion	Procedure Nu	imber: 1/2-ODC-2.02
Title: ODCM: G	ASEOUS EFI	FLUENTS			Unit: <u>1/2</u> Revision:	Level Of Use: In-Field Reference Page Number:
	ONTINUOUS	RELEASE I	ATTACH Page DEPOSITION		.S (SPECIAL I	117 of 128_
			TABL	E 2.3-30		
vv-	>500	HRS/YR OR	R >150 HRS/Q	TR FOR SPEC	IAL DISTAN	US RELEASES CES
			Same as 7	able 2.3-29		•
· ~			· · · · ·	la di tang La ditatang	•••• ••• •••	
	• • • •		•	• •		
	-		· .			
		:	· · · ·	1.1 4 - 1 1.1 11 <u>1</u> 1	•	
•, •		• 5		e e		, · · · ·
•		•			an a	
•	an ya An An	e.	ي. م	1915 19 1 8	•	
· · ·		÷ •		1. 1. <u>1.</u> 1. <u>1.</u>		
÷.	• • • • • •		·	$\frac{1}{2}$		
* - 14 -2-						
			.•	:		
						-
					•	. :

])

ł

.

ر ب

٠,

.

.

• • • •

Be	aver Valley	Power Stat	tion		Procedure Number	: ODC-2.02
tle:	___				Unit: Le	vel Of Use:
• •		_		ŀ	1/2 Revision: Pa	In-Field Reference
DCM: GASEC	OUS EFFLUENTS	S			Revisiou: ra	118 of 128
			HMENT L	•		
	•	' Page				
CONTI	NUOUS RELEAS	SE DEPOSITION	PARAME	TERS (SE	PECIAL DIST	rances)
		TABL	E 2.3-31			
TV	-2 DEPOSTION I					
- `*		OR >150 HRS/C				
	(IDEN I	IFIED IN ATTA	meters ⁻²)	TABLE	2.2-3}	
		(11-9)	metera J			
·		INDIVIDUA	L RECEPT	ORS		
DOWNWIND	SITE	VEGETABLE	MILK	MILK	MEAT	ſ
SECTOR	BOUNDARY	GARDEN	COW	GOAT	ANIMA	L RESIDENCE
N	20.20	2.05		.693	.847	2.190
NNE	34.90	2.02		.459	1.850	2.110
ININES						
NE	54.20	29.30	.455	.078	.455	30.400
		29.30 8.92	.455 	.078 .661	.455 	30.400 32.200
NE ENE	54.20 57.50	8.92		.661		32.200
NE ENE E	54.20 57.50 38.10	8.92 3.90	.455 .382 	.661 1.020	 1.020	32.200 22.700
NE ENE ESE	54.20 57.50 38.10 18.60	8.92 3.90 3.56	 .382 	.661 1.020 1.380	 1.020 3.560	32.200 22.700 3.560
NE ENE E	54.20 57.50 38.10	8.92 3.90		.661 1.020	 1.020	32.200 22.700
NE ENE ESE SE SSE	54.20 57.50 38.10 18.60 19.00 13.30	8.92 3.90 3.56 3.03 2.65	 .382 .351 .318	.661 1.020 1.380 .351	 1.020 3.560 1.100 2.570	32.200 22.700 3.560 3.030 3.690
NE ENE ESE SE SSE SSE	54.20 57.50 38.10 18.60 19.00 13.30 11.30	8.92 3.90 3.56 3.03 2.65 10.40	 .382 .351 .318 .934	.661 1.020 1.380 .351 .094	 1.020 3.560 1.100 2.570 1.860	32.200 22.700 3.560 3.030 3.690 1.950
NE ENE ESE SE SSE SSE SSW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44	8.92 3.90 3.56 3.03 2.65 10.40 1.26	 .382 .351 .318	.661 1.020 1.380 .351 .094 .266	 1.020 3.560 1.100 2.570 1.860 1.260	32.200 22.700 3.560 3.030 3.690 1.950 4.430
NE ENE ESE SE SSE SSE SSW SW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44 3.95	8.92 3.90 3.56 3.03 2.65 10.40 1.26 2.21	 .382 .351 .318 .934 .664	.661 1.020 1.380 .351 .094	 1.020 3.560 1.100 2.570 1.860 1.260 1.920	32.200 22.700 3.560 3.030 3.690 1.950 4.430 2.210
NE ENE ESE SE SSE SSE SSW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44	8.92 3.90 3.56 3.03 2.65 10.40 1.26	 .382 .351 .318 .934	.661 1.020 1.380 .351 .094 .266	 1.020 3.560 1.100 2.570 1.860 1.260	32.200 22.700 3.560 3.030 3.690 1.950 4.430
NE ENE ESE SE SSE SSE SSW SW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44 3.95	8.92 3.90 3.56 3.03 2.65 10.40 1.26 2.21	 .382 .351 .318 .934 .664	.661 1.020 1.380 .351 .094 .266	 1.020 3.560 1.100 2.570 1.860 1.260 1.920	32.200 22.700 3.560 3.030 3.690 1.950 4.430 2.210
NE ENE ESE SE SSE SSW SW WSW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44 3.95 25.10	8.92 3.90 3.56 3.03 2.65 10.40 1.26 2.21 2.65	 .382 .351 .318 .934 .664 .597	.661 1.020 1.380 .351 .094 .266 1.320 	 1.020 3.560 1.100 2.570 1.860 1.260 1.920 2.380	32.200 22.700 3.560 3.030 3.690 1.950 4.430 2.210 2.650
NE ENE ESE SSE SSE SSW SW WSW WSW	54.20 57.50 38.10 18.60 19.00 13.30 11.30 6.44 3.95 25.10 28.40	8.92 3.90 3.56 3.03 2.65 10.40 1.26 2.21 2.65 1.23	 .382 .351 .318 .934 .664 .597 .646	.661 1.020 1.380 .351 .094 .266 1.320 	 1.020 3.560 1.100 2.570 1.860 1.260 1.920 2.380 .961 2.230	32.200 22.700 3.560 3.030 3.690 1.950 4.430 2.210 2.650 1.230

• •

:

Beaver Valley Power Station	Procedure N	lumber: 1/2-ODC-2.02
Title:	Unit	Level Of Use:
	1/2 Revision:	In-Field Referen Page Number:
ODCM: GASEOUS EFFLUENTS		119 of 128
ATTACHMENT L	•	•
Page 5 of 7		
CONTINUOUS RELEASE DEPOSITION PARAMETERS	(SPECIAL	DISTANCES)
TABLE 2.3-32		
CB-2 DEPOSTION PARAMETERS (D/Q) FOR CONT >500 HRS/YR OR >150 HRS/QTR FOR SPECIA (IDENTIFIED IN ATTACHMENT E TAB	L DISTAN	
$(1E-9 \text{ meters}^2)$		
Same as Table 2.3-31		
•		
•		
		:
· · ·		-
	•	•

۱. ::

Beaver Valley Power Station	Procedure No	
Title:	Unit:	1/2-ODC-2.02 Level Of Use:
	1/2	In-Field Reference
ODCM: GASEOUS EFFLUENTS	Revisioa:	Page Number:
		120 of 128
ATTACHMENT L		
Page 6 of 7		
CONTINUOUS RELEASE DEPOSITION PARAMET	TERS (SPECIAL I	DISTANCES)
TABLE 2.3-33		
DV-2 DEPOSTION PARAMETERS (D/Q) FOR (>500 HRS/YR OR >150 HRS/QTR FOR SF (IDENTIFIED IN ATTACHMENT E (1E-9 meters ⁻²)	PECIAL DISTAN	
Same as Table 2.3-29)	
•		
		•
• •		
•		
- matur		
		•
		•
		-
	·	

.

·

•

• :

:

١.

÷

1.

	Beaver	Valley	Power Sta	ition	Procedure Nu	imber: 1/2-ODC-2.02
Title:	ASEOUS EF	· · ·			Unit: <u>1/2</u> Revision: 1	Level Of Use: In-Field Reference Page Number: 121 of 128
co	ONTINUOUS	RELEASE	Pag	CHMENT L e 7 of 7 N PARAMETER	RS (SPECIAL I	
			TAB	LE 2.3-34	·	
•	>500	HRS/YR C (IDENTIF	DR >150 HRS/	(D/Q) FOR CO QTR FOR SPEC ACHMENT E TA meters ⁻²)	CIAL DISTANC	
			Same as	Table 2.3-29		
	·				-	
	• • • •			· · · · · · · · · · · · · · · · · · ·		
ting an Lann Marina	1		- 	• * • •		
						1 - A
		•				
· · · · · · · · · · · · · · · · · · ·		,		·		- -
· · ·	 № 			:•		,
	in an an an Tagairtí Tagairtí	• • • • •		•		
		e de la				ere e com
•						

.

-

and a free second

Be	aver Valley	v Power Stat	tion	Proc	edure Number:	
Title:				Unit		DC-2.02
8 8 L PC-						-Field Reference
ODCM: GASEO	IS FEELUENT	9				lumber:
						122 of 128
			IMENT M			
	•		1 of 3			
BAI	CH RELEASE I	DISPERSION PA	RAMETER	S (SPECIAL	DISTANCI	ES)
		TABL	E 2.3-35			
				•		
CV-1 /	AND CV-2 DISP	ERSION PARAM	AETERS (X	/Q) FOR BA	TCH RELE	ASES
		OR ≥150 HRS/Q				
		IFIED IN ATTA	- ,			
	•		c/m ³)		-	
		•••				
		INDIVIDUA	L RECEPTO	DRS		
DOWNWIND	SITE	VEGETABLE	MILK	MILK	MEAT	
SECTOR*	BOUNDARY	GARDEN	COW	GOAT	ANIMAL	RESIDENCE
N	8.21E-5	8.38E-6		3.72E-6	4.34E-6	8.82E-6
NNE	8.21E-5 3.04E-5	8.38E-0 4.71E-6		5.72E-0 1.40E-6	4.34E-0 4.38E-6	8.82E-0 4.87E-6
NE	4.59E-5	4.71E-0 2.21E-5	 6.05E-7	1.40E-0 1.38E-7	4.38E-0 6.05E-7	4.87E-0 2.28E-5
ENE	4.59E-5 3.72E-5	5.25E-6	0.0312-7	5.66E-7	0.05E-7	1.88E-5
LINE	J.12Ľ-J	J.2JE-0		5.001-1		1.000-J
Е	2.93E-5	3.79E-6	5.15E-7	1.17E-6	1.17E-6	1.78E-5
ESE	2.47E-5	5.61E-6		2.34E-6	5.61E-6	5.61E-6
SE	2.14E-5	5.00E-6	8.13E-7	8.13E-7	2.03E-6	5.00E-6
SSE	2.21E-5	6.31E-6	1.11E-6	3.92E-7	6.13E-6	8.49E-6
S	2,15E-5	3.03E-6	2.76E-6		4.93E-6	5.14E-6
SSW	2.18E-5	6.58E-6	3.81E-6	1.82E-6	6.58E-6	1.78E-5
SW 🔸	1.82Ę-5	1.03E-5		6.67E-6	9.12E-6	1.03E-5
WSW	1.09E-4	1.29E-5	4.10E-6		1.19E-5	1.29E-5
W	1.49E-4	1.05E-5	6.55E-6		8.77E-6	1.05E-5
	1.91E-4	1.72E-5	1.28E-5	1.23E-6	1.72E-5	1.72E-5
WNW	3.08E-4	6.13E-5		3.80E-6	1.36E-5	6.36E-5
WNW NW NNW	J.00E-4	0040		1.35E-6	9.27E-6	5.29E-5

*Measured relevant to center point between BV-1 and BV-2 Containment Buildings

Period of Record: 1976 - 1980

.

, I	Beaver Valley	· · · · ·	Procedure N	umber: 1/2-OD(ר_י <u>י</u>		
Title:					Unit:	Level Of	
					1/2		Field Reference
ODCM: GAS	EOUS EFFLUENTS	;			Revision:	Page Nu	mber: 23 of 128
			HMENT M		·····		25 01 128
			2 of 3				
. B	ATCH RELEASE D	. •		S (SPEC	IAL DIS	TANCES	5)
				•		- •*	
		IABI	E 2.3-36				
VV	-1 AND VV-2 DISP	ERSION PARA	METERS (X	/Q) [,] FOF	R BATCH	I RELEA	SES
	≥500 HRS/YR		· •		• •		
		IFIED IN ATTA		• •	· ·		
		(se	c/m ³)	•			
				220			•
		INDIVIDUA	AL RECEPTO	JRS	······································	• • • •	· · · · · · · · · · · · · · · · · · ·
	D SITE		MILK		· · ·	EAT 🔡	
SECTOR*	BOUNDARY	GARDEN	COW	GOA	T. AN	IMAL	RESIDEN
N	9.75E-5	1.00E-5		4.21E	-6 -4.9	5E-6	1.06E-5
NNE	3.78E-5	5.11E-6	· (1.43E	2-6 4.7	'2E-6	5.30E-6
NE	6.13E-5	2.70E-5	6.20E-7	1.40E	2-7 💡 6.2	20E-7	2.81E-5
ENE	4.83E-5	5.58E-6	. .	5.71E	8-7		2.24E-5
the E	3.66E-5	3.99E-6	5.25E-7	1.19E	2-6 1.1	9E-6	2.10E-5
ESE	2.99E-5	6.13E-6	-	2.43E	· · · · · ·	3E-6	6.13E-6
SE	2.55E-5	5.29E-6	8.24E-7	8.24E		3E-6	5.29E-6
SSE	2.65E-5	6.72E-6	1.12E-6	3.95E		53E-6	9.22E-6
. . .	2.52E-5	3.14E-6	2.83E-6		• ,	29E-6	5.53E-6
SSW	2.60E-5	7.34E-6	4.15E-6	1.92E		84E-6	2.09E-5
	2.13E-5	1.18E-5		7.41E)4E-5	1.18E-5
WSW	1.34E-4	1.51E-5	4.46E-6		1.3	38E-5	1.51E-5
w	1.77E-4	1.25E-5	7.40E-6		1.0)2E-5	1.25E-5
	2.33E-4		1.49E-5				2.07E-5
	3.32E-4		-			54E-5	
NNW	· · ·	4.69E-5			-		6.75E-5
7					.,	- '.	· · · . ;
	elevant to center poir	nt between BV-1	and BV-2 C	ontainm	ent Build	ings	
	-					• •	
Period of Re	cord: 1976 - 1980			· . (· .	•

. .

• •

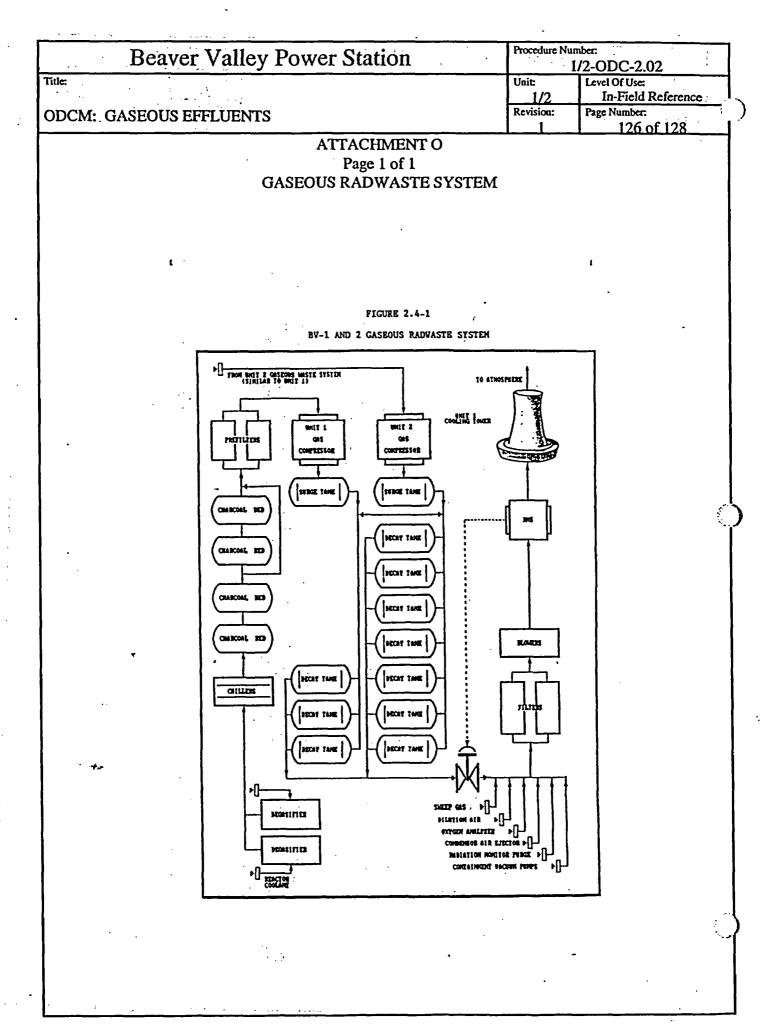
----:

Be	eaver Valley	Power Stat	tion	Proce	edure Number: 1/2-OI	DC-2.02
litle:	· · · · · · · · · · · · · · · · · · ·			Unit	Level	Of Use:
				Revi		-Field Reference
ODCM: GASE	DUS EFFLUENTS			: Revi	1 Page 1	_124 of 128
		ATTACH	IMENT M			
			3 of 3	•		
BA	ICH RELEASE D	ISPERSION PA	RAMETER	S (SPECIAL	, DISTANCI	ES)
		TABL	E 2.3-37			
T	PV-1/2 DISPERSI			OP BATCH	DELEVE	ç
1		$OR \ge 150 HRS/C$	• •			5
		IFIED IN ATTA				
			c/m^3)		/	
			·			
	•	INDIVIDUA	L RECEPTO	JRS		
DOWNWIND	SITE	VEGETABLE	MILK	MILK	· MEAT	:
SECTOR*	BOUNDARY	GARDEN	COW	GOAT	ANIMAL	RESIDENCE
¹ N	3.09E-9	3.30E-6		1.13E-6	1.34E-6	3.36E-6
NNE	2.85E-9	2.68E-6		6.52E-7	2.47E-6	2.68E-6
NE	2.02E-10	7.42E-9	5.44E-7	1.24E-7	5.44E-7	5.51E-9
ENE	1.02E-9	3.21E-6		6.29E-7		1.67E-9
Е	2.15E-9	2.91E-6	4.96E-7	1.14E-6	1.14E-6	2.91E-6
ESE	6.90E-9	4.97E-6		1.95E-6	4.97E-6	4.81E-6
SE	2.91E-6	3.52E-6	6.02E-7	6.02E-7	1.43E-6	3.52E-6
SSE	4.91E-6	3.56E-6	6.53E-7	2.18E-7	3.47E-6	4.71E-6
						2.96E-6
S	2.41E-6	1.78E-6	1.65E-6		2.84E-6	2.906-0
S SSW	2.41E-6 4.83E-6	1.78E-6 2.52E-6	1.65E-6 1.50E-6	 6.60E-7	2.84E-6 2.52E-6	2.96E-6 3.96E-6
		•		 6.60E-7 1.78E-6		
SSW	4.83E-6	2.52E-6	1.50E-6		2.52E-6	3.96E-6
SSW SW	4.83E-6 4.82E-6	2.52E-6 2.75E-6	1.50E-6 		2.52E-6 2.44E-6	3.96E-6 2.75E-6
SSW SW WSW	4.83E-6 4.82E-6 5.77E-7	2.52E-6 2.75E-6 2.81E-6	1.50E-6 8.79E-7		2.52E-6 2.44E-6 2.57E-6	3.96E-6 2.75E-6 2.81E-6
SSW SW WSW W	4.83E-6 4.82E-6 5.77E-7 2.88E-9	2.52E-6 2.75E-6 2.81E-6 1.68E-6	1.50E-6 8.79E-7 4.89E-7	1.78E-6 	2.52E-6 2.44E-6 2.57E-6 1.37E-6	3.96E-6 2.75E-6 2.81E-6 1.68E-6

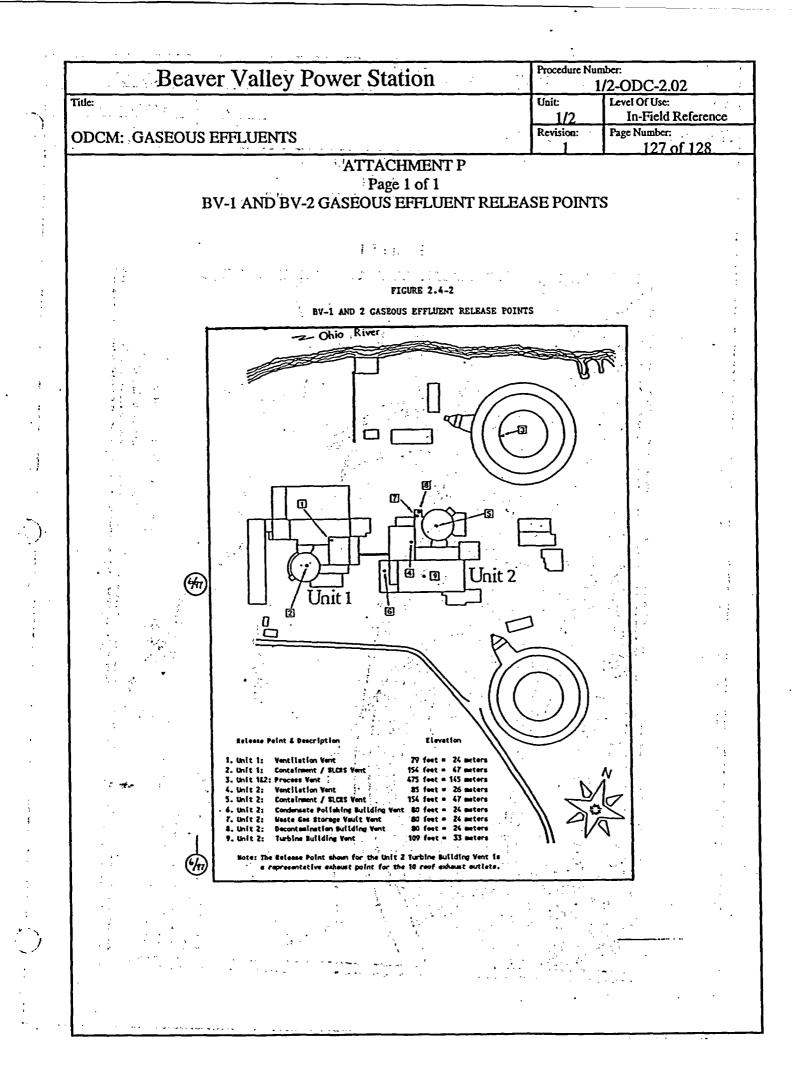
Period of Record: 1976 - 1980

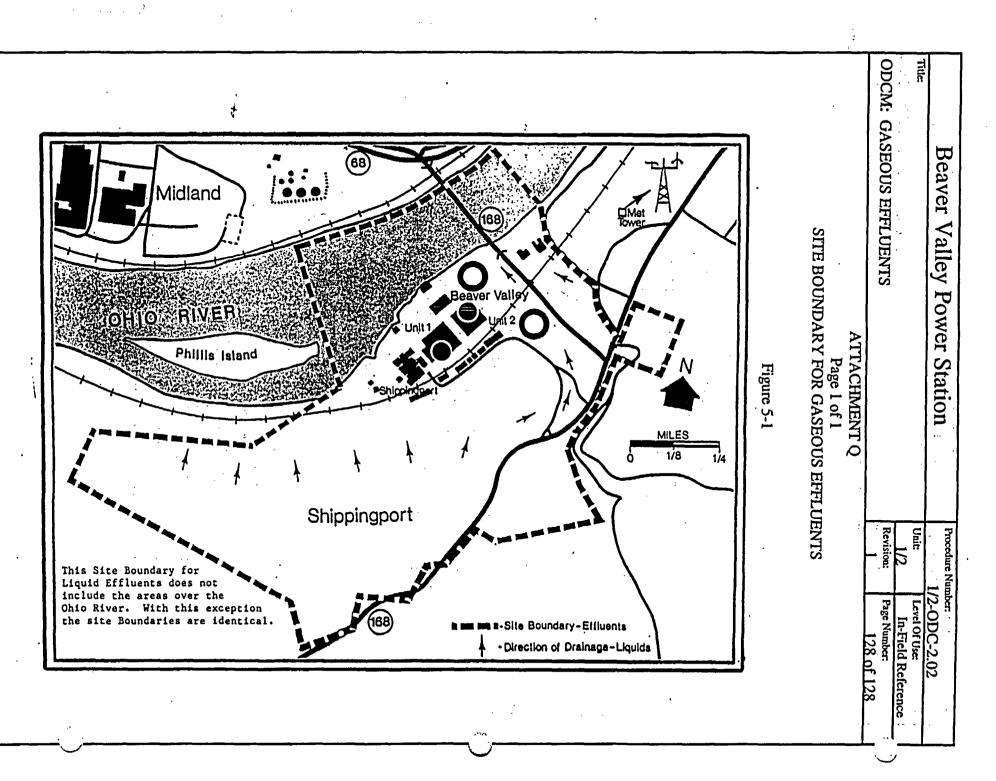
		· · · · · · · · · · · · · · · · · · ·	ĊONTINUO	2 DISPERSI US RELEAS ANCES TO	ES ≥500 HF (sec/m ³)	ETERS (D/0 RS/YR OR ≥	150 HRS/QT		· · · · · · · · · · · · · · · · · · ·		BAT	CM: GASEOUS	Tide:
SECTOR	0.0 - 0.5	0.5 - 1.0	1.0 - 1.5	1.5 = 2.0	2.0 - 2.5	2.5 - 3.0	3.0 - 3.5	3.5 - 4.0	4.0 - 4.5	4.5 - 5.0	CH	FFLU	. <
N NNE NE ENE	2.75E-15 5.90E-17 4.45E-16 1.92E-15	1.07E-5 5.39E-6 1.67E-8 8.87E-8	4.10E-6 2.83E-6 7.39E-8 2.60E-6	2.61E-6 2.19E-6 2.28E-6 2.21E-6	1.51E-6 1.36E-6 1.72E-6 1.66E-6	1.13E-6 1.13E-6 1.19E-6 1.13E-6	8.84E-7 8.05E-7 9.28E-7 9.25E-7	7.13E-7 6.51E-7 6.76E-7 7.23E-7	5.93E-7 5.64E-7 7.34E-7 6.06E-7	5.06E-7 4.81E-7 5.32E-7 3.82E-7	ATTACHMENT N Page 1 of 1 BATCH RELEASE DISPERSION PARAMETERS	EFFLUENTS	alley Power
E ESE SE SSE	1.84E-15 2.96E-13 9.16E-8 3.50E-8	5.10E-6 5.26E-6 3.13E-6 4.86E-6	2.77E-6 - 3.48E-6 3.38E-6 3.33E-6	2.04E-6 1.99E-6	1.44E-6 1.34E-6 1.31E-6 1.29E-6	1.12E-6 9.93E-7 9.58E-7 9.42E-7	8.74E-7 6.70E-7 7.14E-7 6.55E-7	6.92E-7 5.76E-7 5.74E-7 5.24E-7	5.11E-7 4.37E-7 4.32E-7 3.95E-7	4.82E-7 3.83E-7 3.68E-7 3.32E-7	ATTACHMENT Page 1 of 1 SPERSION PAR		er Station
S SSW SW WSW	1.22E-7 1.75E-5 2.08E-5 8.56E-8	4.12E-6 6.22E-6 9.11E-6 9.35E-6	3.97E-6 2.84E-6 3.47E-6 3.16E-6		1.59E-6 1.48E-6 1.25E-6 1.46E-6	1.17E-6 1.08E-6 1.11E-6 1.01E-6	7.75E-7 7.83E-7 8.19E-7 9.06E-7	6.24E-7 6.31E-7 7.17E-7 7.52E-7	4.74E-7 5.62E-7 6.89E-7 5.99E-7	4.00E-7 4.77E-7 5.85E-7 5.07E-7	NT N 1 ARAMETERS	.´.	
	; *** ••••	این و دید مو	· · · · · ·				· · · · ·	· · · · · · · · · · · · · · · · · · ·			6 (0 - 5	1/2 Revision	Unit
W WNW NW NNW	5.44E-17 9.25E-18 2.61E-16 1.91E-15	4.52E-6 · 1.44E-8 1.98E-8 3.91E-6	4.21E-6 5.66E-8 8.37E-8 3.66E-6	2.49E-6 1.92E-6 2.24E-6 2.15E-6	1.69E-6 1.59E-6 1.46E-6 1.40E-6	1.25E-6~ 1.17E-6 1.08E-6 1.08E-6	4.86E-7 7.75E-7 8.09E-7 8.03E-7	7.68E-7 4.61E-7 6.12E-7 6.48E-7	5.80E-7 5.28E-7 5.42E-7 5.37E-7	5.48E-7 4.89E-7 4.60E-7 4.56E-7	MILES		1/2
											-	In-Field Reference age Number:	-ODC-2.02

a de la companya de O companya de la comp



___**__1_**__





E

A9.621B

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 Nu	mber: 1/2-ODC-2.03]
Title:	Unit:	Level Of Use:	
ODCM: Radiological Environmental Monitoring Program	<u>1/2</u> Revision:	- General Skill Reference Page Number:	1)
	0	2 of 18	
TABLE OF CONTENTS		·	
1.0 PURPOSE		3	
2.0 SCOPE			
3.0 REFERENCES AND COMMITMENTS	••••••	3	
3.1 References			
3.2 Commitments 4.0 RECORDS AND FORMS			
4.0 RECORDS AND FORMS			
4.2 Forms			ļ
5.0 PRECAUTIONS AND LIMITATIONS			
6.0 ACCEPTANCE CRITERIA			
7.0 PREREQUISITES 8.0 PROCEDURE			i i
8.1 REMP Overview			
8.2 Sampling and Analysis Program			
8.3 Crosscheck Program	•••••	5	1
8.4 Land Use Census Program8.5 Direct Radiation Monitoring Program			
ATTACHMENT A EXPOSURE PATHWAY AND SAMPLING RE	EOUIREM	ENTS	\bigcirc
ATTACHMENT B LOCATION OF SAMPLING SITES			
•			
· · · · · · · · · · · · · · · · · · ·			
			1
			ľ
· · ·			l
		•	1
		Ý	
		-	
			1

.

. .

•

.

. •

•

-

Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-2.03
Title: ODCM: Radiological Environmental Monitoring Program	Unit:	Level Of Use: General Skill Reference Page Number: 3 of 18
1.0 <u>PURPOSE</u>	<u> </u>	<u> </u>
1.1 This procedure provides the Radiological Environmental Monit requirements from the Radiological Branch Technical Position.		gram (REMP)
	. ¹	
2.0 <u>SCOPE</u>	1. ; <u>;</u> ; ; ; ;	and the second
2.1 This procedure is applicable to all station personnel that are qua described and referenced in this procedure.	alified to p	erform activities as
3.0 <u>REFERENCES AND COMMITMENTS</u>	•	
3.1 <u>References</u>		the second s
3.1.1 Radiological Branch Technical Position, Revision 1, 1979.		e de la companya de l La companya de la comp
3.1.2 Regulatory Guide 1.109, Calculation of Annual Dose to M Reactor Effluents For the Purpose of Evaluating Compliand Appendix I, Revision 1, 1977.		
 3:1.3 NUREG-1301, Offsite Dose Calculation Manual Guidance Effluent Controls for Pressurized Water Reactors (Generic 1). 	•	v
3.1.4 Regulatory Guide 1.111, Methods For Estimating Atmosph of Gaseous Effluents in Routine Releases From Light-Wate 1, July 1977.		
3.1.5 1/2-ADM-1640, Control of the Offsite Dose Calculation M	lanual	
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>		ч
4.1 <u>Records</u> Anti-action of the second state	· · · · · ·	· · ·
4.1.1 Any calculation supporting ODCM changes shall be docum retrievable document (e.g., letter or calculation package) w number.	nented, as	appropriate, by a ropriate RTL

.•

·)

:

		t	Procedure Nu	
• • •	Beaver Valley Power Stati	on		1/2-ODC-2.03
	4: Radiological Environmental Monitoring Pro	oram	Unit:	Level Of Use: General Skill Reference
	······································		Revision:	Page Number:
			0	<u>4 of 18</u>
4.2	<u>Forms</u>			
4.2	2.1 None.			
5.0	PRECAUTIONS AND LIMITATIONS			
5.1	The specified detection capabilities are state- measurements in industrial laboratories.	of-the-art for ro	outine environ	mental
6.0	ACCEPTANCE CRITERIA	• •		
6.1	Any change to this procedure shall contain su maintain the level of radioactive effluent con 40 CFR Part 190, 10 CFR 50.36a and Appen accuracy or reliability of effluent dose or setp	trol required by dix I to 10 CFR	7 10 CFR 20.1 R 50, and not a	302,
6.	All changes to this procedure shall be proved and 1/2-ADM-1640 ^(3.1.5) .	epared in accor	dance with 1/2	2-ADM-0100 ^(3.1.6)
6.	All changes to this procedure shall be rev 1/2-ADM-0101 ^(3.1.7) and 1/2-ADM-1640	viewed and app (3.1.5)	proved in acco	rdance with
7.0 .	PREREQUISITES			
7.1	The user of this procedure shall be familiar w	vith ODCM stru	acture and form	nat.
8.0	PROCEDURE			
8.1	<u>REMP Overview</u>			
8.	 Attachment A, Table 3.0-1 contains the s description, sampling and collection freq various exposure pathways in the vicinit REMP. Attachment B, Figures 3.0-1 thr sampling points. 	uency, analysis y of the Beaver	s, and analysis Valley Power	frequency for Station for the
8.2	Sampling and Analysis Program			
~ ~	2.1 Environmental samples shall be collected	d and analyzed	according to <i>i</i>	Attachment A.

__

)

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.

... . .

:

* • • •

Be	aver Valley Power Station	Procedure Nu	mber: 1/2-ODC-2.03
ride: ODCM: Radiolo	gical Environmental Monitoring Program	Unit: <u>1/2</u> Revision: 0	Level Of Use: General Skill Reference Page Number: 5. of 18
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	ys and for those
8.2.2.2	The initial radiological environmental monitorin for the first 3 years of commercial operation (or maximum burnup in the initial core cycle). Fol changes may be proposed based on operational	other period co lowing this peri	rresponding to a
unot unot	iations are permitted from the required sampling so otainable due to hazardous conditions, seasonal un matic sampling equipment and other legitimate re	navailability, ma	
8.2.3.1	IF specimens are unobtainable due to sampling every effort shall be made to complete correctiv sampling period.		
8.2.3.2 8.3 <u>Crosscho</u>	All deviations from the sampling schedule shall REMP report. eck Program	be documented	l in the annual
parti	laboratories of the licensee and licensee's contrac cipate in the Environmental Protection Agency's loactivity Laboratory Intercomparisons Studies (C gram.	(EPA's) Enviro	onmental
8.3.1.1 ·	This participation shall include all of the determ radionuclide combination) that are offered by E monitoring program.		
8.3.1.2	The results of analysis of these crosscheck samp REMP report. The participants in the crosscheck program code so that the NRC can review the p submission in the annual REMP report.	k program may	provide their
8.3.1.3	<u>IF</u> the results of a determination in the crossche specified control limits, <u>THEN</u> the laboratory sl problem and take steps to correct it. The results action shall be included in the annual REMP re	nall investigate s of this investig	the cause of the
inde	requirement for the participation in the crossched pendent checks on the precision and accuracy of erial in environmental sample matrices as part of	the measuremen	nts of radioactive

. . .

-

. ..

Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-2.03
Tide: ODCM: Radiological Environmental Monitoring Program	Unit: 1/2	Level Of Use: General Skill Reference
	Revision:	Page Number:
		6 of 18

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 <u>IF</u> 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/m^2 , will produce the 26 kg/yr assumed in Regulatory Guide 1.109^(3.1.2), for child consumption of leafy vegetation.

	Beaver Valley Power Station	Procedure Number: 1/2-ODC-2.03				
Title: ODCM: Ra	diological Environmental Monitoring Program	Unit: 1/2)3 ill Reference			
		Revision:	Page Number: 7 of	18		
		<u> </u>	<u> </u>			
8.5 <u>Dir</u>	ect Radiation Monitoring Program					
, 8.5.1	The increase in the number of direct radiation stations is to individual exposure (mrem) and population exposure (mar Criterion 64 - monitoring radioactivity releases, of 10 CFR NRC will place a similar amount of stations in the area bet in 1/2-ODC-3.03, Table 3.12-1.	n-rem) in a R Part 50,	accordance wit Appendix A.	The		
	- END -			•		
* : `*,*				•		
	· · · · ·	·.		•		
		1				
		-				
			· · · ·	•		
			•			
			•.			
, , (
•						
• *		-		· · · ·		
•		•• •				
		: -		۰.		
•						
			• •			
4				:		
		· •				
· • •				• .		
		•				
÷.		: · `	•			
			•			
~			۲ ۰۰۰			
• .**						
	• 					
			-	•		
	· · · · · · · · · · · · · · · · · · ·		·	:		
			•	•		

این از این امریکی هیرونی این اون از این میکند. از میکند میکن بود بعض میکن میکند این این میکند. این این او این ا این

		•		TABLE 3.0-1 PROGRAM DETAILS				ODCM:	1
EXPOSURE PATHWAY AND/OR SAMPLE 1. AIRBORNE Radioiodine and Particulates	SITE NO. 13 30 32 46.1 48	\$ <u>SECTOR</u> ¹ 11 4 15 3 10	<u>MILES²</u> 1.4 0.5 0.8 2.3 16.3	SAMPLE POINT DESCRIPTION ³ Meyer's Fame Shippingport (S.S.) Midland (S.S.) Industry, Midway Dr. Weirton, W. Va., Weirton Water Tower, Collier Way ⁴	SAMPLING AND COLLECTION FREQUENCY Continuous sampler operation with collection at least weekly	TYPE AND FREQUENCY OF ANALYSES Radioiodine Cartridge: I-131 analysis weekly. Particulate Sampler: Gross beta analysis following filter change ⁵ ; Gamma isotopic analysis on composite (by- location) quarterly.	AT EXPOSURE PATHWAY	Title: ODCM: Radiological Environmental Monitoring Program	Beaver Valley P
2. DIRECT RADIATION	10 13 14 15 27 28 29B 30 32 45 45.1	3 11 14 7 1 3 4 15 5 6	1.0 1.4 2.5 3.7 6.1 8.6 8.0 0.5 0.8 2.2 1.9	Shippingport Boro Meyer's Farm Hookstown Georgetown Post Office Brunton's Sherman's Farm Beaver Valley Geriatric Center Shippingport (S.S.) Midland (S.S.) Rt. 18 & Anderson Street Raccoon Twp., Kennedy's Corner	Continuous measurement with quarterly collection.	Gamma dose quarterly.	ATTACHMENT A Page 1 of 4 HWAY AND SAMPLING REQUIREMENT	Monitoring Program	Power Station
	46 46.1 47	3 3 14	2.5 2.3 <u>4.9</u>	Industry, Midway Drive Industry, Rt. 86 - Garage East Liverpool, OH Water Treatment Plant			JIREMEN	Unit: 1/2 Revision: 0	Procedure Num
	48 51 59 60 70 71	10 5 6 13 1 2	16.3 8.0 1.0 2.5 3.4 6.0	Weirton, W. Va., Weirton Water Tower, Collier Way Aliquippa (S.S.) 236 Green Hill Rd. 444 Hill Road N. of Western. Beaver School- Engle Rd. Brighton Twp., First Western Bank			S	Level Of Use: General Skill Reference Page Number: 8 of 18	1/2-ODC-2.03

•

:

· · · · · · · · · · · · · · · · · · ·				TABLE 3.0-1				OD Title	Γ
				PROGRAM DETAILS			· ,	oDCM:	
		•		PROORAM DETAILS	•				
EXPOSURE	•				SAMPLING AND			Ra	
PATHWAY AND/OR	<u>SITE</u>			SAMPLE POINT	COLLECTION	TYPE AND FREQUENCY		<u>d</u> i	
SAMPLE	<u>NO.</u>	SECTOR'	MILES ²	DESCRIPTION ³	FREQUENCY	OF ANALYSES		0	lõ
2. DIRECT RADIATION	72	3	3.3	Industry, Logan Park	Continuous	Gamma dose quarterly.	H .	Radiological Environmental Monitoring Program	eaver
(continued)	73	4	2.5	618 Squirrel Run Road	measurement with		AT EXPOSURE PATHWAY	a	l @
(commuca)	74	4	7.0	CCBC, 137 Poplar Avenue	quarterly		PC	E E	17
	75	5	4.1	117 Holt Road	collection.		ISC	l ≦i	
	76	6	3.8	Raccoon Elementary School			. JR	l n	
	77	6	5.6	3614 Green Garden Road			E .	ne l	alley
	78	7	2.7	Raccoon Municipal Building			PA.	nte -	
·	79	8	4.4	Rt. 151 & Pross Ln.	• • • • •	,	T		2
	80	9	8.2	Raccoon Park Office, Rt. 18	• • • • • •		- WI	5	1¥
	81	9	3.6	Millcreek United Presb. Church			A A	nit	ower
	82	9	6.9	Hanover Municipal Building		· · · · · ·		1	
2. 有1. 这个人的公式的问题。	83 ;	10	4.2	735 Mill Creek Road Hancock Parks & Recreation	nt i statu za s		Page AND	ng	
	84	11	8.3				E S S	P	tation
C ((((((((((05	10	5.7	Complex Rts. 8 and 30 Intersection		· .	2 of SAI	go	15
	85 86	12 13	6.2	East Liverpool, Oh., 1090 Ohio			A F	rar	B
	00	15	0.2	Avenue			PL T	, B	1 :
•	87	14	7.0	Calcutta, Oh Calcutta Smith's		· · · ·	IMENT A 2 of 4 SAMPLING		
	07	• •		Ferry Rd & Valley Drive			ុ ជិ	1.	1
	88	15	2.8	Midland Heights, 110 Summit	· · · ·		RI		
				Road		-	Ď	i :	
	89	15	4.8	Ohioville, 488 Smith's Ferry			IJ		┼──
		~ •		Road		·	RE	Rev	
	90	16	5.2	Opposite Fairview School		 4. 1. 	Ň	Unit: 1/2 Revision: 0	
	91	2	3.9	Pine Grove & Doyle Roads			REQUIREMENT	 "[``.	
• • • • •	92	12	2.8	Georgetown Road (S.S.)		•	. T		
• · · ·	93	16	1.1	Midland – Sunrise Hills	\$		SJ	205	12
•	94	8	2.2	McCleary Road & Pole Cat		-		Vel C	H;
, • • .		••	•	Hollow Road				una c	Ň
	95	10	2.3	832 McCleary Road	••••	alayse of the last office of the	•	Level Of Use: General Skill Reference Page Number: 9 of 18	/2-ODC-2.03
					`				3
								Ref	
				· · · · · · · · · · · · · · · · · · ·		•		cre	
					•			nce	1

	<u>EXPOSURE</u> PATHWAY AND/OR	<u>SITE</u>			TABLE 3.0-1 (continued) PROGRAM DETAILS SAMPLE POINT	SAMPLING AND COLLECTION	TYPE AND FREQUENCY		ODCM: Rad	•
	<u>SAMPLE</u>	<u>NO.</u>	SECTOR!	MILES ²	DESCRIPTION ³	FREQUENCY	OF ANALYSES		iol	
3.	WATERBORNE a) Surface (River)	49	3	5.0	Upstream side of Montgomery Dam ⁴	Composite sample with sample collection at least	Gamma isotopic analysis monthly; tritium analysis on composite (by location)	EXPOSURE	ogical Er	Beaver
		2.1	14	1.5	Downstream, Midland – J&L	monthly ⁶ .	quarterly.	Insc	Iviro	Val
	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-weckly; gamma isotopic analysis on composite (by location) monthly; tritium analysis on	AT RE PATHWAY	Radiological Environmental Monitoring Program	'alley Power
				·		·	composite (by location) quarterly.	ATT/ P AY A	nitorin	
	c) Ground Water				None required ⁷			ATTACHMENT Page 3 of 4 AY AND SAMPI	ng Prop	Station
	d) Shoreline Sediment	2A	13	0.2	BVPS Outfall Discharge	Semi-annually.	Gamma isotopic analysis semi-annually.	IMENT A 3 of 4 SAMPLING REQUIREMENTS	gram	On
4.	INGESTION	25	10	2.1	Searight's Farm	At least bi-weekly	Gamma isotopic and I-131	NG R	;	
	a) Milk	*8 *8	••	••	·	when animals are	analysis on each sample.	ΈÇ		
		** *8		••		on pasture; at least monthly at other		Ŋ		<u> </u>
		96	10	10.4	Windsheimer's Farm ⁴	times.		REN	Unit: 1/2 Revision: 0	Procedure
٠	b) Fish	2A	13	0.2	BVPS Outfall Discharge	Semi-annually one sample of	Gamma isotopic analysis. On edible portion.	IENT		L Nu
	ı	49	3	5.0	Upstream side of Montgomery Dam	available species.			Level Of I Genera Page Nurr	
	c) Food Products				Three (3) locations within 5	Annually at harvest	Gamma isotopic and I-131		Use: al Skill Ref nber: 10 of 18	-2.0
·	(Leafy Vegetables)	••			miles of BVPS (Shippingport,	time.	analysis on edible portion.			μ ^ω
					Industry, and Georgetown) ⁹	•	• .			
					One (1) control location (Weirton, W. Va. area) ⁹		·		el Of Use: 2neral Skill Reference e Number: 10 of 18	

• -	\sim		~
 	TABLE 3.0-1 (continued) PROGRAM DETAILS EXPOSURE SITE SECTOR ¹ MILES ² SAMPLE POINT SAMPLING AND TYPE AND FREQUENCY PATHWAY AND/OR NO. DESCRIPTION ³ COLLECTION OF ANALYSES SAMPLE - - - FREQUENCY 'Sector numbers 1-16 correspond to the 16 compass direction sectors N - NNW. - NNW.	EXPOSURE	Beaver V Tite: ODCM: Radiological Envi
	 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. 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. ⁷ Collection of Ground Water samples is not required as the hydraulic gradient or recharge properties are directed toward the river because 	ATTACHMENT A Page 4 of 4 URE PATHWAY AND SAMPLING	r Valley Power Station Environmental Monitoring Program
	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).	A ING REQUI	
••	⁹ Exact location may vary due to availability of food products.	REQUIREMENTS	Procedure Nu Unit: 1/2 Revision: 0
			mber: 1/2-ODC-2.03 Level Of Use: General Skill Page Number: 11 of
		•	DC-2.03 Of Use: leral Skill Reference Number: 11 of 18

. .

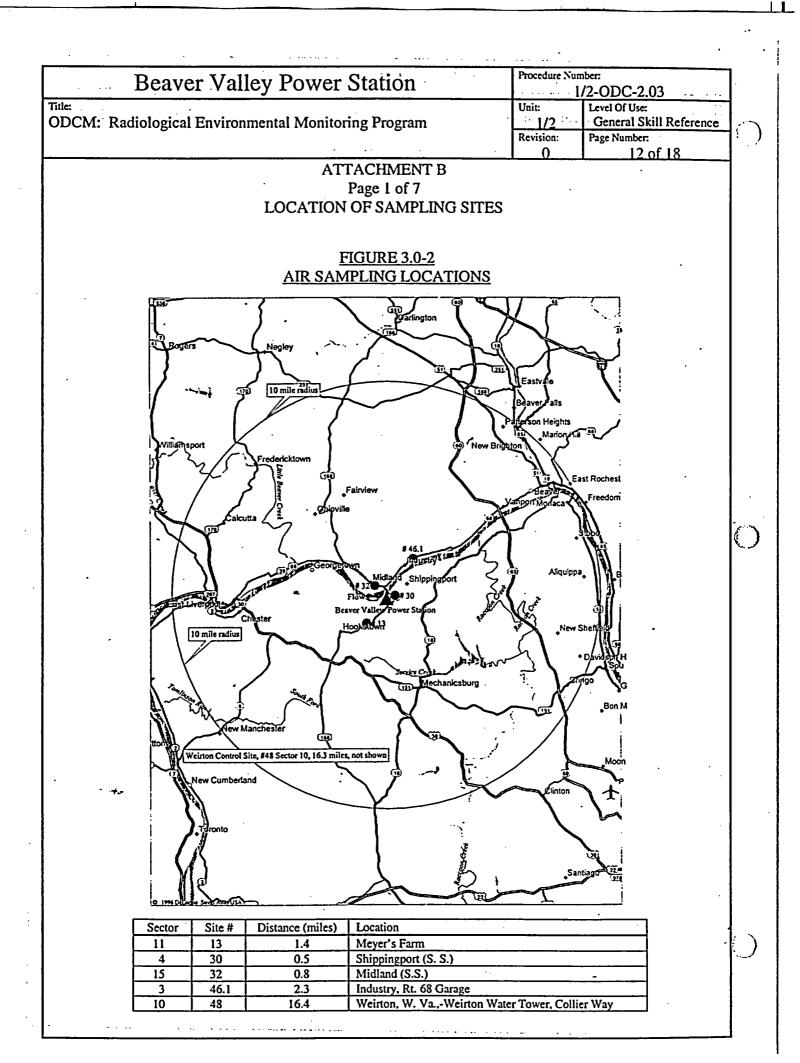
.

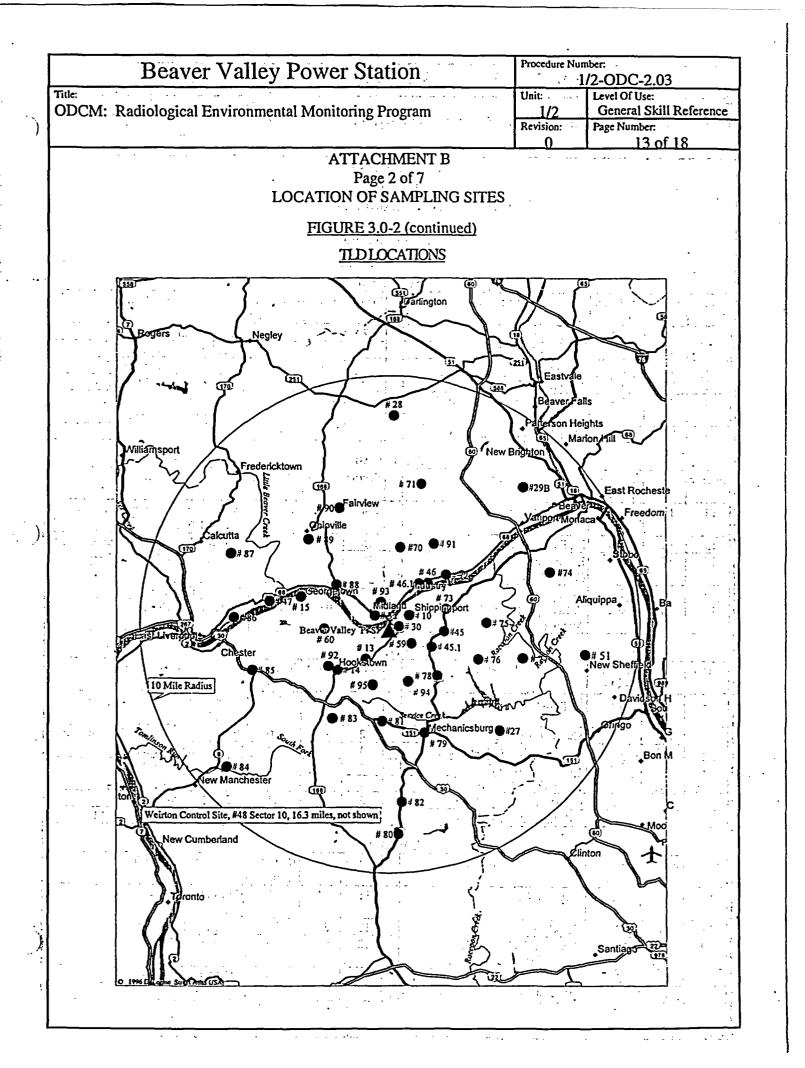
· · · · · · · · ·

• • •

:

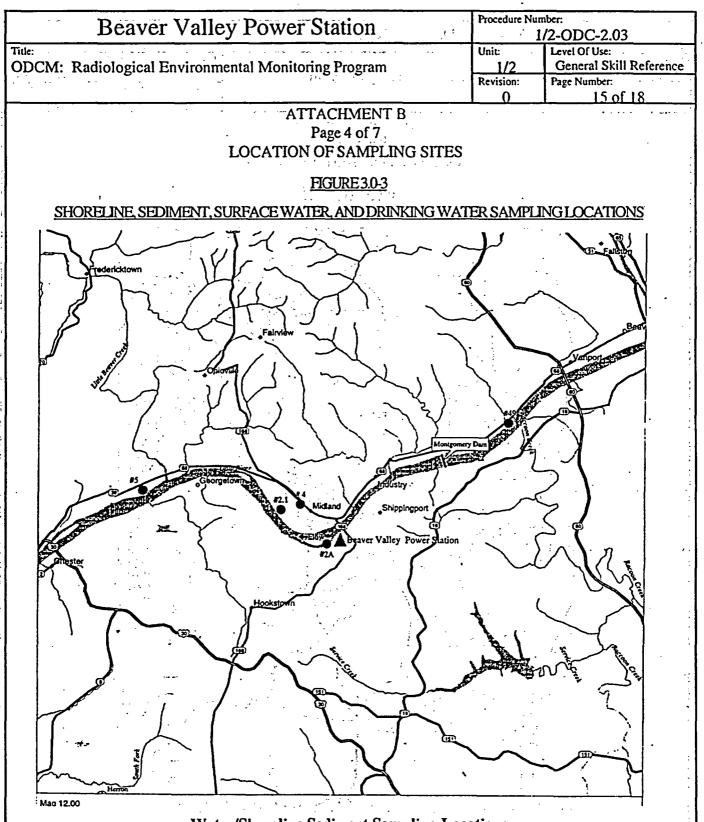
.





		Boor	er Valley Power Sta	-++	òn:		Pr	ocedure Number:	
	-	Beav		1/2-ODC-2.03					
Title:		,		<u> </u>			U	nit: Level Of Use:	
ODCN	I: Rad	liologica		1/2 General Skill Reference					
							Re	vision: Page Number:	
						<u></u>		0 14 of 18	
			ATTAC			В		•	
	•		0		of 7				
			LOCATION OF	SA	MPLI	NG SI	TES		
					· · ·	:			
			FIGURE 3	.0-2	2 (cont	(nued)			
			TLD LO	<u> </u>	ATION	<u> 15</u>			
			So	ut}	ieast				
Sector	Site #	Distance	Location	Liki		Site #	Distance	Location	
Sector	Sile #	(miles)	Location	3	Sector	Sile #	(miles)	Location	
7	27	6.1	Brunton's Farm	Ş	• 7	78	2.7	Raccoon Municipal Bldg.	
6	45.1	1.9	Raccoon Twp., Kennedy Corners	37	8	79	4.4	Rt. 151 & Pross Ln.	
5	45.1 51	8.0	Aliquippa (S.S.)	2	9	80	8.2	Raccoon Park Office-Rt. 18	
6	59	1.0	236 Green Hill Road	123) 53(9	82	6.9	Hanover Municipal Building	
6	76	3.8	Raccoon Elementary School		· 8	94	2.2	McCleary Road &	
v			Raccoon Liencinary School		Ů			Pole Cat Hollow Road	
6	77	5.6	3614 Green Garden Road						
		L		<u>ــــــــــــــــــــــــــــــــــــ</u>	I	L	L	I	
				rth	west				
Sector	Site #	Distance	Location	~	Sector	Site #	Distance	Location	
		(miles)	· · · · · · · · · · · · · · · · · · ·	: ÷			(miles)		
14	15	3.7	Georgetown Post Office		14	87	7.0	Calcutta, Oh Calcutta Smith's	
			· · ·					Ferry Rd & Valley Drive	
15	32	0.8	Midland (S.S.)	i., i	15	88	2.8	Midland Heights – 110 Summit Rd	
14	47	4.9	E. Liverpool, Oh.		15	89	4.8	Ohioville – 488 Smith's Ferry Road	
			(Water Company)	<u> </u>					
13	60	2.5	Haney's Farm	<u> </u>	16	90	5.2	Opposite Fairview School	
13	86	6.2	E. Liverpool, Oh., 1090 Ohio		16	93	1.1	Midland - Sunrise Hills	
	L	<u> </u>	Avenue	54.4	<u> </u>		L	L	
	•		·		ieast				
Sector	Site #	Distance		5		Site #	Distance	Location	
20001		(miles)				0.00 17	(miles)	Bocation	
4	10	1.0	Shippingport Boro	Ē.	1	70	3.4	North of Western Beaver School -	
Ŧ			· · · ·					Engle Road	
1	28	8.6	Sherman's Farm		2	71	6.0	Brighton Twp., First Western Bank	
3	29B	8.0	Beaver Valley Geriatric Ctr.		3	72	3.3	Industry, Logan Park	
4	30	0.5	Shippingport (S.S.)		4	73	2.5	618 Squirrel Run Road	
5	45	2.2	Rt. 18 & Anderson Street	24 -	4	74	7.0	CCBC – 137 Poplar Avenue	
3	46	2.5	Industry, Midway Drive		5	75	4.1	117 Holt Road	
3	46.1	2.3	Industry, Rt. 68 - Garage	24		91	3.9	Pine Grove Rd. & Doyle Rd.	
	1	L	·	E			1		
				uth	west				
Sector	Site #	Distance	. Location	1	Sector	Site #	Distance	Location	
Sector		(miles)		1.			(miles)		
	13	1.4	Meyer's Farm	· _	11	84	8.3	Hancock Co. Parks & Recreation	
11				Ľ				Complex	
11			Hookstown	•	12	85	5.7	Rts. 8 & 30 Intersection	
11	_14	2.5				່ດາ	2.8		
11	<u>14</u> 48	2.5 16.3	Weirton, W. Va., - Weirton		12	92	2.0	Georgetown Road	
11 11 10	48	16.3	Weirton, W. Va., - Weirton Water Tower, Collier Way	1. 3 W					
11	t		Weirton, W. Va., - Weirton	1.3X (5) (5)	12 10	92	2.8	832 McCleary Road	

1



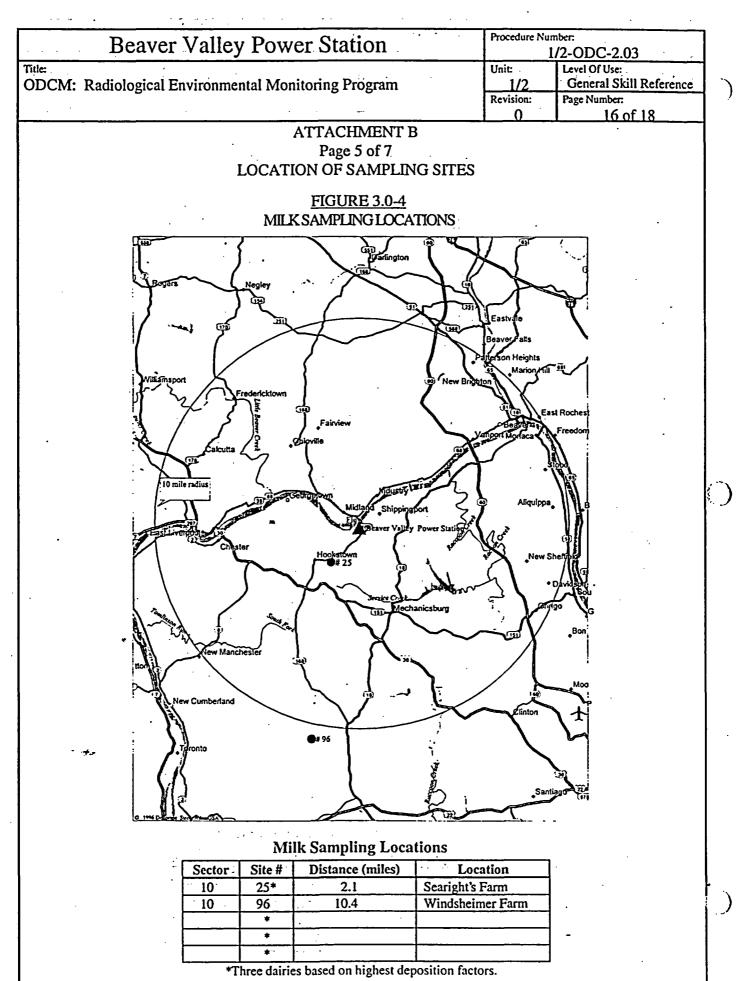
)

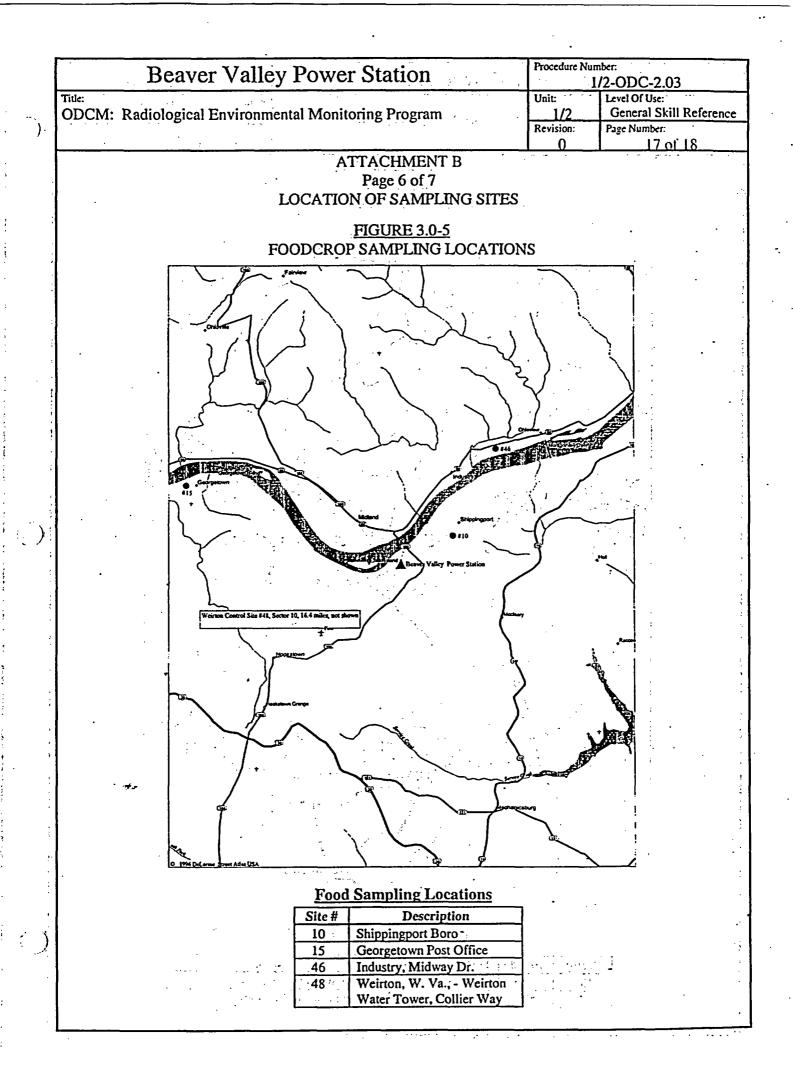
Water/Shoreline Sediment Sampling Locations

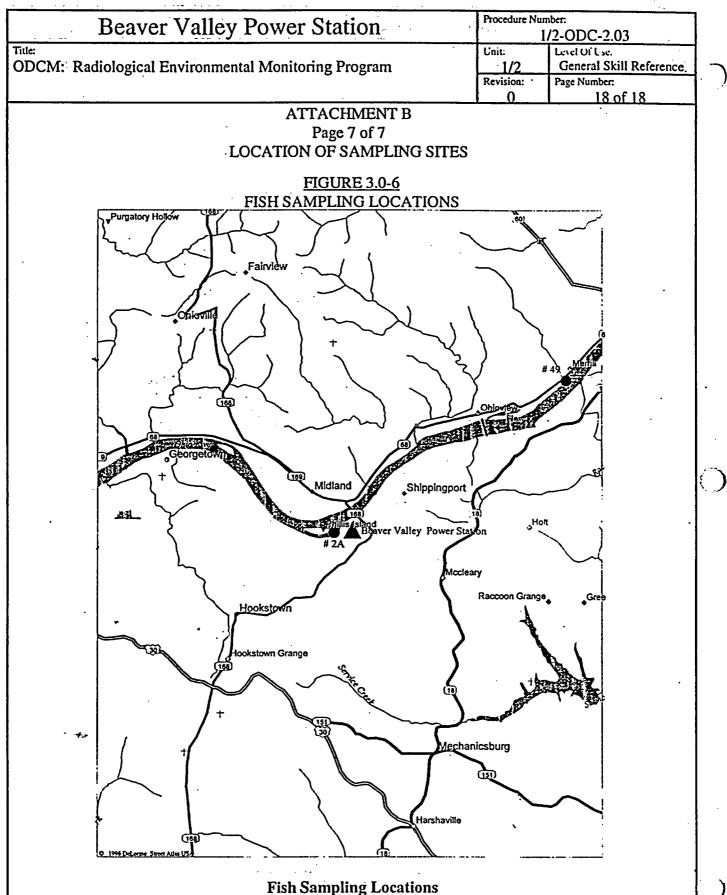
· Sample Type -	Sector	-Site #	· Distance (miles)	Location
Surface Water	- 14	2.1	1.5	Downstream, Midland - J&L
Surface Water	-3	49	5.0	Upstream side of Montgomery Dam
Sediment	- 13 -	- 2A		BVPS Outfall Discharge
Drinking Water	- 15	• 4 •	1.3	Midland Water Treatment Plant
Drinking Water	14 ·	5	4.9	E.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

ال المراجع الم المراجع المراجع

. .







1_

Fish Sampling Locations

Sector	Site #	Distance (miles)	Location
13	2A	. 0.2	BVPS Outfall Discharge
3	49	5.0	Upstream side of Montgomery Dam

Beaver Valley Power Station

Unit 1/2

A9.621B

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 N	umber: 1/2-ODC-2.04
Title: ODCM: Information Related to 40 CFR 190	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Reference Page Number: 2 of 6
TABLE OF CONTENTS		
 1.0 PURPOSE		
•		
**		
		-

		Beaver Valley Power Station	· · · ·	Procedure Nur 1	^{nber:} /2-ODC-2.04
Γ	Title:		· • •	Unit: 1/2	Level Of Use: General Skill Reference
	ODCM:	Information Related to 40 CFR 190		Revision:	Page Number: 3 of 6
ŀ	1.0	PURPOSE		<u> </u>	<u>13 01 0</u>
			11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	: :	State of the
	1.1 - -	This procedure provides the steps to be taken when 4.11.4.1 exceeds twice the limit of any of the ODC Limit. ^(3.1.2)			
	- 1.1.	Prior to issuance of this procedure, these items ODCM.	were locate	d in Sectior	n 4 of the old
	2.0	SCOPE	•		
	2.1	This procedure is applicable to all station personnel described and referenced in this procedure.	that are qua	alified to pe	rform activities as
	3.0	REFERENCES AND COMMITMENTS	· .	· • .	
	3.1	References		4 - ¹ 2 - 1	
	3.1.	1 40 CFR Part 190			
	3.1.	2 1/2-ODC-3.03, ODCM: Controls for RETS an	d REMP Pr	ograms	
i	3.1.	3 1/2-ADM-1640, Control of the Offsite Dose C	alculation M	lanual	
:	3.1.	4 1/2-ADM-0100, Procedure Writer's Guide	· .	•••••••••	
	3.1.				
	3.2 3.2.	Commitments 1 Technical Specification 6.9.2f, Special Reports	, ¹¹ .,		en produktion († 411) 1920 - Produktion 1920 - Produktion († 1970)
	3.2.	 NUREG-1301, Offsite Dose Calculation Manu Effluent Controls for Pressurized Water Reactor 1) 			
	4.0	RECORDS AND FORMS	le etter i An etter i		
	4.1	Records		•	
	4.1.	Any calculation supporting ODCM changes sh retrievable document (e.g.; letter or calculation number.			
	4.2	Forms	· · · · · · · · · · · · · · · · · · ·		
	4.2.	コンセンドン したいたい かんしいせいせい	· · · · · · ·	•	

	Procedure N	umber:	7
Beaver Valley Power Station		1/2-ODC-2.04	
Title:	Unit: 1/2	Level Of Use: General Skill Reference	1
ODCM: Information Related to 40 CFR 190	Revision:	Page Number: 4 of 6	
5.0 PRECAUTIONS AND LIMITATIONS		-	
5.1 The Offsite Dose Limits used to show compliance to	this procedure are a	s follows:	
5.1.1 ODCM Control 3.11.2.a; Liquid Effluents: ≤ 1.3 mrem/quarter any Organ.	5 mrem/quarter Tota	I Body or ≤ 5	
5.1.2 ODCM Control 3.11.2.b; Liquid Effluents: ≤ 3 mrem/year any Organ.	mrem/year Total Boo	dy or ≤ 10	
5.1.3 ODCM Control 3.11.2.2.a; Gas Effluent-Noble (mrad/quarter Beta	Gas: \leq 5 mrad/quarte	er Gamma, or ≤ 10	
5.1.4 ODCM Control 3.11.2.2.b; Gas Effluents-Noble mrad/year Beta	Gas: $\leq 10 \text{ mrad/yea}$	ar Gamma ≤ 20	
5.1.5 ODCM Control 3.11.2.3.a; Gas Effluents-Partice any organ	ulates & Iodines: <	7.5 mrem/quarter	
5.1.6 ODCM Control 3.11.2.3.b; Gas Effluents-Partice organ	ulates & Iodines: \leq	15 mrem/year any	\sim
5.1.7 ODCM Control 3.11.4.1; All Fuel Cycle Source: Organ, except the thyroid, which is limited to \leq	•	otal Body or any	۹ <u>ـــ</u>
6.0 <u>ACCEPTANCE CRITERIA</u>			
6.1 Any changes to this procedure shall contain sufficien maintain the level of radioactive effluent control requ 190, 10 CFR 50.36a; and Appendix I to 10 CFR 50, a reliability of effluent dose or setpoint calculation. ^(3.2.1)	uired by 10 CFR 20. and not adversely im	1302, 40 CFR Part	
6.1.1 All changes to this procedure shall be prepared i and 1/2-ADM-1640. ^(3.1.3)	n accordance with 1/	/2-ADM-0100 ^(3.1.4)	
6.1.2 All changes to this procedure shall be reviewed a ADM-0101 ^(3.1.5) and 1/2-ADM-1640. ^(3.1.3)	and approved in acco	ordance with 1/2-	
7.0 <u>PREREQUISITES</u>			
7.1 The user of this procedure shall be familiar with OD	CM structure and co	ntent.	·
8.0 <u>PROCEDURE</u>			
8.1 Information Related To 40 CFR 190			
			4

8.1 Information Related To 40 CFR 190

CONTROL 3.11.4.1 requires that when the calculated doses associated with the effluent 8.1.1 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:

Beaver Va	Illey Power Station	Procedure No	umber: 1/2-ODC-2.04
Title:		· Unit:	Level Of Use:
		1/2	General Skill Reference
ODCM: Information Related	i to 40 CFR 190	Revision: 0	Page Number: 5 of 6
(including commitme radioactiv	ons shall be made including direct radiat outside storage tanks, etc.) to determine ent to any MEMBER OF THE PUBLIC ity and to radiation from uranium fuel cy	whether the from all faci cle sources	dose or dose lity releases of exceeds the limits of
	n to the total body or any organ, except t for a calendar year.	ne inyroid, v	which is limited to \leq
with	ny of these limits are exceeded, prepare a in 30 days a Special Report pursuant to 2f. ^(3.2.1) The following shall be included	Technical Sp	pecification
8.1.1.1.1.1	Define the corrective action to be take		
	to prevent recurrence of exceeding the 3.11.4.1.	limits of OI	DCM CONTROL
8.1.1.1.1.2	Include the schedule for achieving con	formance wi	ithin the limits of
	ODCM CONTROL 3.11.4.1.		
8.1.1.1.1.3	Include an analysis that estimates the r MEMBER OF THE PUBLIC from ura		
	including all effluent pathways and din year that includes the release(s) covered	ect radiation	, for the calendar
•••••			····
8.1.1.1.1.4	Describe levels of radiation and conce involved, and the cause of exposure le		
8.1.1.1.1.5	If the estimated dose(s) exceeds the lin	*	
	3.11.4.1, and if the release condition re Part 190 has not already been correcte		•
	variance in accordance with the provis Submittal of the report is considered a granted until staff action on the reques	timely reque	est, and a variance is
8.2 Inside The Site Bour	ndary Radiation Doses	•	
÷	essment of radiation doses (from Radioa IC due to their activities inside the site b		-
•	e assessment of radiation doses from rad PUBLIC due to their activities inside the		

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.

•

;

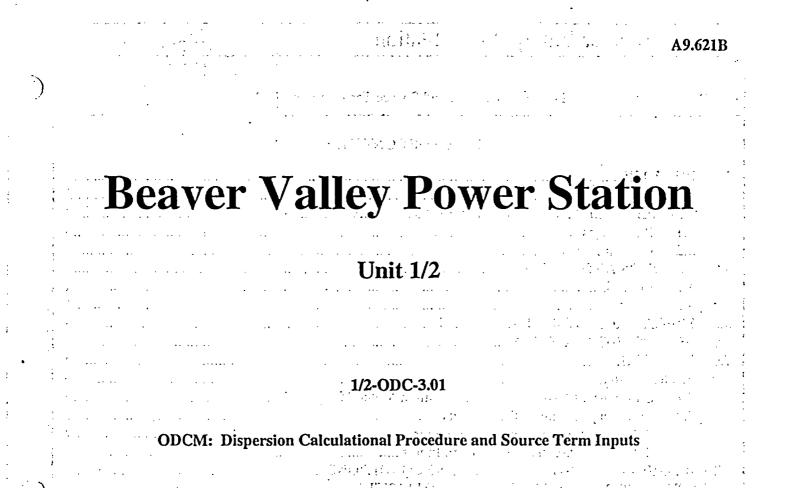
Beaver Valley Power Station		Procedure Number: 1/2-ODC-2.04		
Title:	. :	Unit: Level O		Level Of Use: General Skill Reference
ODCM: Information	Related to 4	0 CFR 190	190 Revision: Page Number:	Page Number: 6 of 6
dos	e assessmen	THE PUBLIC inside the site bo ts for an offsite MEMBER OF COF THE PUBLIC conducting	THE PUBLIC	is also assumed to be
8.2.1.2.1	used for c than the 7 THE PUI miles N a	rified by showing that the grou lose calculation at the site bour (/Q dispersion parameter at the BLIC would most likely have the and 0-0.5 miles NNW). A com rs is as follows:	dary (0.352 mil location where he maximum ex	les NW) is greater a MEMBER OF posure time (0-0.5
x/QUsec		x/Q Where an Assumed		References

χ/Q Used for Dose	χ/Q Where a	n Assumed	χ/Q References
Calculation	MEMBER OF	THEPUBLIC	from
, se	Would Most Likely I	Have the Maximum	1/2-ODC-2.02
	Exposur	eTime	
Site Boundary	Inside the Site	Inside the Site	See Attachment F
0.352 miles NW	Boundary	Boundary	
	0-0.5 miles N	0-0.5 miles NNW	
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 2.2-5
$7.35E-5 \text{ sec/m}^3$	2.44E-5 sec/m ³	5.57E-5 sec/m ³	Table 2.2-7
9.24E-5 sec/m ³	2.33E-5 sec/m ³	5.47E-5 sec/m ³	Table 2.2-8
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 2.2-10

 \bigcirc

- END -

t sta



Document Owner Manager, Health Physics 1. 2

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

	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.01
Title:		Unit:	Level Of Use:
		1/2	General Skill Reference
ODC	ODCM: Dispersion Calculational Procedure and Source Term Inputs		Page Number:
		0	2 of 12
	TABLE OF CONTENTS		
1.0	PURPOSE		
2.0	SCOPE	••••••	
3.0	REFEFERENCES AND COMMITMENTS	•••••	
	3.1 References		
	3.2 Commitments	•••••	4
4.0	RECORDS AND FORMS		
	4.1 Records		
50	4.2 Forms		
5.0	PRECAUTIONS AND LIMITATIONS		
6.0	ACCEPTANCE CRITERIA		
7.0	PREREQUISITES	•••••	4
8.0	PROCEDURE		
	 8.1 Summary of Dispersion and Deposition Methodology 8.2 Summary of Source Term Inputs 		
	······································		
	8.2.1 Liquid Source Term Inputs8.2.2 Gaseous Source Term Inputs	•••••	······/
۵T	8.2.2 Gaseous Source Term Inputs FACHMENT A BV-1 AND 2 RELEASE CONDITIONS		
	CACHMENT B LIQUID SOURCE TERM INPUTS		
	CACHMENT C GASEOUS SOURCE TERM INPUTS		

	• ·		
			· ·
	•		
	•		
			1
	• • • • •		

 \bigcirc

· · - ·	Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.01
Title:		Unit: - 1/2	Level Of Use: General Skill Reference
ODCM: Di	spersion Calculational Procedure and Source Term Inputs	Revision:	Page Number: 3 of 12
1.0 <u>PU</u>	RPOSE	· · · · · ·	<u> </u>
	s procedure contains the basic methodology that was used for leposition (D/Q).	or calculati	ng dispersion (χ/Q)
- 1.1.1	Prior to issuance of this procedure, these items were locate ODCM.	d in Apper	ndix A of the old
– Lic	s procedure also contains the input parameters to the variou ensee and its subcontractors for determination of the liquid tes.		
1.2.1	Prior to issuance of this procedure, these items were locate ODCM.	d in Apper	ndix B of the old
2.0 <u>SC</u>	<u>OPE</u>	· · · · ·	
	s procedure is applicable to all station personnel (including lified to perform activities as described and referenced in th		
3.0 <u>RE</u>	FEFERENCES AND COMMITMENTS	<i>.</i>	
3.1 <u>Re</u>	ferences	. • • • •	
3.1.1	NUS-2173, Development Of Terrain Adjustment Factors For Power Station, For the Straight-Line Atmospheric Dispersi June 1978		
3.1.2	NUREG/CR-2919, XOQDOQ: Computer Program For Th Of Routine Effluent Releases At Nuclear Power Stations, S		
3.1.3	Regulatory Guide 1.23, Meteorological Measurement Prog	gram for N	uclear Power Plants
	Regulatory Guide 1.111, Methods for Estimating Atmosph of Gaseous Effluents In Routine Releases From Light-Wat - 1, July 1977	er-Coded]	
3.1.5	NRC Gale Code,	· · ·	.'
3.1.6	SWEC LIQ1BB Code,	·	, · · .
3.1.7	SWEC GAS1BB Code,	•	1919 - 1 1
3.1.8	NUREG-1301, Offsite Dose Calculation Manual Guidance Effluent Controls for Pressurized Water Reactors (Generic 1)		•
	1/2-ADM-1640, Control of the Offsite Dose Calculation N		

Beaver Valley Power Station	Procedure Number: 1/2-ODC-3.01			
Title:	Unit: 1/2	Level Of Use: General Skill Reference		
ODCM: Dispersion Calculational Procedure and Source Term Inputs	Revision: 0	Page Number: 4 of 12		
3 1 10 1/2-ADM-0100 Procedure Writer's Guide		•		

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, deposition, or source term mixes 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 This procedure contains the information that was previously contained in Appendix A and Appendix B of the previous BV-1 and 2 Offsite Dose Calculation Manual.
 - 5.1.1 In regards to this, the Tables that were transferred from Appendix A and Appendix B to the appropriate ATTACHMENTS of this procedure will still contain a prefix denoting an "A" or "B".

6.0 <u>ACCEPTANCE CRITERIA</u>

- 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^(3.1.10) and 1/2-ADM-1640.^(3.1.9)
 - 6.1.2 All changes to this procedure shall be reviewed and approved in accordance with 1/2-ADM-0101^(3.1.1) and 1/2-ADM-1640.^(3.1.9)

7.0 PREREQUISITES

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

		Procedure Nu	imber:
	Beaver Valley Power Station	·	1/2-ODC-3.01
	Title:	Unit: 1/2	Level Of Use: General Skill Reference
);	ODCM: Dispersion Calculational Procedure and Source Term Inputs	Revision:	Page Number: 5 of 12
	 8.0 <u>PROCEDURE</u> 8.1 <u>Summary of Dispersion and Deposition Methodology</u> 	· · · · · · · · · · · · · · · · · · ·	
	 8.1.1 Annual average and grazing season average values of related deposition (D/Q) were calculated for continuous and internactivity from the site according to the straight-line airflow RG-1.111.^(3.1.4) 8.1.1.1 Undecayed and undepleted sector average X/Q and I each of sixteen 22.5-degree sectors at the site bound receptors. 8.1.1.2 For an elevated release, (i.e.; occurring at a height thof a nearby structure) credit was taken for the effectic comprised of the physical release height plus momenterrain height at a given receptor. 	nittent gas (Gaussian) D/Q values ary and ma hat is twice ve release	eous releases of model described in were obtained for ximum individual the height or more height which is
)	 8.1.1.3 A building wake correction factor was used to adjust releases. 8.1.1.4 Airflow reversals were also accounted for by applyin recirculation factors for both ground and elevated re 8.1.1.5 The methodology employed in the calculation of intervalues is that described in NUREG/CR-2919.^(3.1.2) 	ng site-spec leases at th	cific terrain e site. ^(3.1.1)
	 8.1.2 The site continuous gaseous release points that have been following: 8.1.2.1 PV-1/2: The Unit 1/2 Gaseous Waste/Process Vent draft cooling tower 8.1.2.2 CV-1 and CV-2: The Unit 1 Rx Containment/SLCR Filtered Pathway 8.1.2.3 VV-1 and VV-2: The Unit 1 Ventilation Vent and the Pathway 	attached to S Vented 1	the Unit 1 natural
)	 8.1.2.4 TV-2: The Unit 2 Turbine Building Vent 8.1.2.5 CB-2: The Unit 2 Condensate Polishing Building V 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 Va 8.1.3 The intermittent releases are from PV-1/2, VV-1, VV-2, C 	ult Vent	- V-2.

1.....

·, ·

. ..

Be	eaver Valley Power Station	Procedure Nu	
		Unit:	1/2-ODC-3.01 Level Of Use:
OCM: Dispers	ion Calculational Procedure and Source Term Inputs	1/2 Revision:	General Skill Reference Page Number:
		0	<u>6 of 12</u>
treat	y PV-1/2 was considered to be an elevated release with ted as ground level releases. A summary of the release ttions is given in ATTACHMENT A.		
	ite meteorological data for the period January 1, 1976 e used as input for the annual-average calculations.	through De	ecember 31, 1980
8.1.5.1	The grazing season was represented by a six-month October 31 for each year of the 5-year meteorologics season corresponds reasonably well with the growin	al data base	•
8.1.5.2	The data were collected according to guidance in NF in Section 2.3 of the BVPS-2 FSAR.	RC RG-1.2	3 ^(3.1.3) as described
8.1.5.3	The parameters used in the χ/Q and D/Q calculation direction, and ΔT as an indicator of atmospheric stat (35 ft) and ΔT (150-35 ft) were used for all release p which required the use of 500 ft winds and ΔT (500- of the release height (510 ft).	ility. The oints except	lower level winds of the Process Vent
inte	annual average and grazing season χ/Q and D/Q value rmittent radioactive releases were calculated at the site rest vegetable garden, nearest milk cow, nearest milk g	boundary,	nearest resident,
8.1.6.1	In the case of the Process Vent releases, several of e evaluated in each downwind sector to determine the values.	-	• •
8.1.6.2	The distances of the limiting maximum individual re release points are given in ATTACHMENT E (Tabl	•	
8.1.6.3	The continuous release annual average X/Q values at Containment Vents, Ventilation Vents, Process Vent Decontamination Building Vent, Waste Gas Storage	, Turbine I	Building Vents,
- 145 e	Polishing Building Vent are given in ATTACHMEN 2.2-10) of 1/2-ODC-2.02. Continuous release annua release points are also given at ten incremental dowr	IT F (Table Il average)	es 2.2-4 through (/Q's for these same
8.1.6.4	Continuous release D/Q values for these same release ATTACHMENT K (Tables 2.3-21 through 2.3-27) 0-5 mile incremental distances, and in ATTACHME 2.3-34) of 1/2-ODC-2.02 for the special locations.	of 1/2-OD	C-2.02 for the same
8.1.6.5	Due to their location adjacent to the Containment Bu Building and Gaseous Waste Storage Tank Vault χ/c the Containment Vent χ/Q 's and D/Q's.	-	

B	eaver Valley Po	wer Station	Procedure No	1/2-ODC-3.01
Title:	•	· · · · · · · · · · · · · · · · · ·	Unit:	Level Of Use:
i			1/2 Revision:	General Skill Reference
DCM: Disper	sion Calculational Proce	edure and Source Term Inputs		Page Number: 7 of 12
8.1.6.6		e Building Vent χ/Q 's and D/Q s well due to its location adjace		
×, ×, ×, ×, ×, ×, ×, ×, ×, ×, ×, ×, ×, ×	•	es 2.3-35 through 2.3-38) of 1/ es originating from the Contai respectively.		
8.1.7.1		ables are based on 32 hours pe ges and 74 hours per year of P		
8.2 <u>Summa</u>	ry of Source Term Inpu	<u>ts</u>	•	•
8.2.1 <u>Liq</u>	uid Source Term Inputs			
8.2.1.1		ale Code used for generation o ATTACHMENT B (Table B:1		uid Source Term
8.2.1.2		LIQ1BB Code used for generation of the sentence of the sentenc		2 Liquid Source
8.2.2 <u>Ga</u>	seous Source Term Inpu	<u>its</u>		
8.2.2.1	-	GAS1BB Code for generation ATTACHMENT C (Table B:2		aseous Source Term
8.2.2.2	•	GAS1BB Code for generation ATTACHMENT C (Table B:2		aseous Source Term
			· · ·	
	•			
•	•			
••• -		•		•
<u></u>				
	•		· .	• * • • •
	· .			$(1,2,\ldots,2,n) \in \mathbb{R}^{n}$
• •	· ·		·	
		•		
			,	
			·	
		•		-

· • .

• •

;)

Beav	ver Valley Pow	ver Station	• • •	Procedure Nur	1.000-3.01
lītie:)	lure and Source Term	Inputs	Unit: 1/2 Revision: 0	Level Of Use: General Skill Reference Page Number:
	BV-1 AN	ATTACHMENT A Page 1 of 1 ID 2 RELEASE CON	DITION		<u>8 of 12</u>
		TABLE A:1			· .
	VV-1 VENTILATION VENT (PAB EXHAUST)	CV-1 RX CONTAINMENT/ SLCRS VENT		GASEOUS JPROCESS	TV-2 TURBINE BUILDING VENT
	VV-2 SLCRS UNFILTERED PATHWAY	CV-2 RX CONTAINMENT/ SLCRS FILTERED PATHWAY			
TYPE OF RELEASE	GROUND LEVEL	GROUND LEVEL	ELI	EVATED	GROUND LEVEL
	Long Term And Short Term	Long Term And Short Term		Term And ort Term	Long Term And Short Term
Release Point Height (m)	26	47	•	155	- 33
Adjacent Building Height (m)	19	44		155	33
Relative Loca tion To Adjacent Structures	E. Side Of Primary Auxiliary Bldg	Top Center Of Containment Dome	Atop C	ooling Tower	Turbine Building
Exit Velocity(m/sec)	NA	NA		9.4	NA
Internal Stack Diameter (m)	NA	NA		0.25	NA
Building Cross- Sectional Area (m ²)	1600	1600		NA	NA
Purge Frequency* (hours/year)	32	32		74	NA
Purge Duration (hrs/release)	8	8		NA	NA
*Applied to Short Term	calculations only				
					- :
				•	

....

1_

۰.

B	eaver V	alley Po	wer Stati	ion		Procedure Nu		DC-3.01	
Title: -			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · ·	• · ·	Unit:		DC-3.01 1 Of Use:	•• . • •
• • •	• • • •	·			L	1/2		eral Skill Re	ference
ODCM: Disper	rsion Calcula	ational Proc	edure and Sou	urce Term]	inputs	Revision: 0		Number: 9 of 12	• • •
	• •		ATTACH	MENT B	·· · · .		-		
			Page 1	of 1					
		LIQU	JID SOURCE	E TERM IN	PUTS				
		·	, , ,		· 7				
			TABL	C D.1.					
INPUTS TO C	ALE CODE	FOR GEN				URCET	Гру	MIXES	
						ORCE I		MIALS	
<i>t</i> . ,	BV-	I PWR INP	JTS			VAL	JE 🐨		
ł					·		* :		
Thermal Power		vatts)		1	· · . ·		6.000		
Plant Capacity I Mass Of Primar		oweend the)				24			
Percent Fuel Wi						· · 3 4	5.000	·	
Primary System						6	0.000		
			·					· • · ·	
Letdown Cation			<i>i</i>		• • •		6.000		
Number Of Stea							3.000		
Total Steam Flo	•	•		·			1.620		
Mass Of Steam Mass Of Liquid				. . •			6.772 7.000 [°]		
inuss or Equid	In Lach Otca	·	(mousand tos)	a de la ser de	• • • •	· · · · · ·	1.000		
Total Mass Of S	econdary Co	olant (thousa	nd lbs)	• •	• • •	129	6.000		
Mass Of Water		•	and lbs)			29	1.000		
Blowdown Rate							3.900		
Primary To Seco Fission Product)				0.000	· · · · · · · · · · · · · · · · · · ·	
I ISSION I IOUUCI	Carry-Over F	Taction			·· ¥ .	• • • •	.001		
Halogen Carry-(Over Fraction				• •		.010	·	
Condensate Der			.				0.000		
Radwaste Diluti	on Flow (thou	isand gpm)		, ⁷ ; ³ •	-	2	2.500		
		· ·		• • •			•		
	, .	BV-1	LIQUID WAS	TE INPUTS		•	1 : .		, · . · ·
				COLLECTION				INATION	• •••
	FLOW RATE			TIME	TIME		ACTO		1
STREAM	(gal/day)	OFPCA	DISCHARGE	(days)	(days)	<u> </u>	Cs	OTHERS	
Shim Bleed	1.32E4	1.000	0.000	11.260	7.220	1E7	1E7	1E7	1.25
Rate	 1						1		٠
Equipment	6.00E2	1.000	0.000	11.260	7.220	1E7	1E7	1E7	,
Drains	~~~~		0.000	11.200		1 1			
Clean Waste	7.50E1	1.000	1.000	0.071	0.648	1E5	2E4	1E5	
Input	1.3061		1.000	0.071 i	0.040		2124		
Dirty Waste	1 2552	0.025			0 6 4 0	124	254	106	• • • •
Input	1.35E3	0.035	1.000	0.071	0.648 .	1E5	2E4	1E5	. *
-	0.7554		1.000	0.071	0.440	1800	054	1175	
Blowdown	9.75E4		1.000	0.071	0.648	1E5	264	1E5	••••
	00					<u>.</u>		•	
Untreated Blowdown	0.0		**						

)

)

۲	Regiver 1	<u></u>	Power Sta	tion		Procedure	Number:]
	Deaver, V		ower Sta					DDC-3.01	
itle:	;					Unit: 1/2		el Of Use: eneral Skill Refere	
DCM: Disp	ersion Calcu	lational Pro	ocedure and S	ource Term In	puts	Revision:		e Number:	
	· · · · · ·		· · ·		r	0		<u>10 of 12</u>	· · ·
				HMENT B					
		T TC		2 of 2	TTO				
			JOID SOOKC	E TERM INP	015				
			TAB	LE B:1b					
INPUTS 7	TO SWEC LIC	QIBB CODI			/-2 LIQ		URCE	TERM MIXES	
			2 PWR INPUTS			· .		VALUE	
			_						
	mal Power Lev		tts)					2766.000	
	Capacity Fact Of Primary C		cand libe)					.800 385.000	
	ent Fuel With (.120	
	ary System Le							57.000	
								•	
	own Cation De		Flow					5.700	
	ber Of Steam	•)					3.000	
	Steam Flow (r) Generator (thous	sand lbs)				11.600 8.700	
			Generator (thou	•				100.000	
				,					
			int (thousand lbs					2000.000	
	: Of Water In S	Steam Genera	ator (thousand ll	hs)				298.000	
				,					1
	down Rate (th	ousand lbs/h	ir)				•	22.300	
Prima	ary To Second	ousand lbs/h lary Leak Rat	r) te (lbs/day)					100.000	
Prima	•	ousand lbs/h lary Leak Rat	r) te (lbs/day)	, -					
Prima Fissio	ary To Second on Product Car	iousand lbs/h lary Leak Rat rry-Over Frac	r) te (lbs/day)				·	100.000 .001	
Prima Fissio . · Halog	ary To Second	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction	nr) te (lbs/day) ction				·	100.000	Ner Start
Prima Fissio Halog Cond	ary To Second on Product Car gen Carry-Ove	ousand lbs/h lary Leak Rat rry-Over Frace er Fraction eralizer Flow	rr) te (lbs/day) ction / Fraction					100.000 .001 .010	
Prima Fissio Halog Cond	ary To Second on Product Car gen Carry-Ove lensate Demine	ousand lbs/h lary Leak Rat rry-Over Frace er Fraction eralizer Flow	rr) te (lbs/day) ction / Fraction	, - -			·	100.000 .001 .010 .700	
Prima Fissio Halog Cond	ary To Second on Product Car gen Carry-Ove lensate Demine	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa	ar) te (lbs/day) ction / Fraction and gpm)	ASTE INPUTS	•		·	100.000 .001 .010 .700	Stark
Prima Fissio Halog Cond	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B	rt) te (lbs/day) ction v Fraction and gpm)	ASTE INPUTS COLLECTION	DELAY	DE		100.000 .001 .010 .700 7.800 MINATION	
Prim Fissio Halo Cond Radw	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION	rr) te (lbs/day) ction / Fraction and gpm) EV-2 LIQUID W FRACTION	ASTE INPUTS COLLECTION TIME	DELAY TIME	<u></u>	FACT	100.000 .001 .010 .700 7.800 MINATION ORS	
Prima Fissio Halog Cond	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B	rt) te (lbs/day) ction v Fraction and gpm)	ASTE INPUTS COLLECTION TIME	DELAY	DE		100.000 .001 .010 .700 7.800 MINATION	₹
Prim Fissio Halo Cond Radw	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION	rr) te (lbs/day) ction / Fraction and gpm) EV-2 LIQUID W FRACTION	ASTE INPUTS COLLECTION TIME	DELAY TIME	<u></u>	FACT	100.000 .001 .010 .700 7.800 MINATION ORS	
Prim Fissio Halo Cond Radw	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day)	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA	rr) te (lbs/day) ction / Fraction and gpm) EV-2 LIQUID W FRACTION DISCHARGE	ASTE INPUTS COLLECTION TIME (hrs)	DELAY TIME (hrs)	I	FACT CsRb	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS	
Prima Fissio Halog Cond Radw STREAM Containment Sump	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day)	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000	rr) te (lbs/day) ction / Fraction and gpm) EV-2 LIQUID W FRACTION DISCHARGE	ASTE INPUTS COLLECTION TIME (hrs)	DELAY TIME (hrs)	I	FACT CsRb	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS	
Prim Fissio Halo Cond Radw STREAM	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000	rr) te (lbs/day) ction / Fraction and gpm) V-2 LIQUID W FRACTION DISCHARGE 1.0	ASTE INPUTS COLLECTION TIME (hrs) 35.5	DELAY TIME (hrs) 6.2	I - 1E3	FACT CsRb 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4	
Prim Fissio Halo Cond Radw STREAM Containment Sump Auxiliary	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000	rr) te (lbs/day) ction / Fraction and gpm) V-2 LIQUID W FRACTION DISCHARGE 1.0	ASTE INPUTS COLLECTION TIME (hrs) 35.5	DELAY TIME (hrs) 6.2	I - 1E3	FACT CsRb 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary ⁴ Building Sump	ary To Second on Product Car gen Carry-Ove lensate Demino vaste Dilution FLOW RATE (gal/day) 40 200	ousand lbs/h lary Leak Rat rry-Over Frace er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100	ar) te (lbs/day) ction v Fraction and gpm) V-2 LIQUID W. FRACTION DISCHARGE 1.0 1.0	ASTE INPUTS COLLECTION TIME (hrs) 35.5 35.5	DELAY TIME (hrs) 6.2 6.2	I 1E3 1E3	FACT CsRb 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4 1E4	
Prim Fissio Halo Cond Radw STREAM Containment Sump Auxiliary *- Building Sump Miscellaneous	ary To Second on Product Car gen Carry-Ove lensate Demino vaste Dilution FLOW RATE (gal/day) 40 200	ousand lbs/h lary Leak Rat rry-Over Frace er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010	ar) te (lbs/day) ction v Fraction and gpm) V-2 LIQUID W. FRACTION DISCHARGE 1.0 1.0	ASTE INPUTS COLLECTION TIME (hrs) 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4 1E4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary Building Sump Miscellaneous Sources	ary To Second on Product Car gen Carry-Ove lensate Demino vaste Dilution FLOW RATE (gal/day) 40 200 700	ousand lbs/h lary Leak Rat rry-Over Frace er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100	rr) te (lbs/day) ction / Fraction and gpm) ////////////////////////////////////	ASTE INPUTS COLLECTION 1 TIME (hrs) 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2	I 1E3 1E3	FACT CsRb 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4 1E4 1E4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary ** Building Sump Miscellaneous Sources Rx Plant Samples	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200 700 35	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010 1.000	rr) te (lbs/day) ction / Fraction and gpm) ////////////////////////////////////	ASTE INPUTS COLLECTION TIME (hrs) 35.5 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION <u>ORS</u> OTHERS 1E4 1E4 1E4	
Prima Fissio Halog Cond Radw STREAM Containment Sump Auxiliary ** Building Sump Miscellaneous Sources Rx Plant Samples Lab Drains	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200 700 35 400	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010 1.000 0.002	rr) te (lbs/day) ction / Fraction and gpm) // FRACTION DISCHARGE 1.0 1.0 1.0 1.0 1.0 1.0	ASTE INPUTS COLLECTION 1 TIME (hrs) 35.5 35.5 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS IE4 IE4 IE4 IE4 IE4 IE4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary ** Building Sump Miscellaneous Sources Rx Plant Samples	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200 700 35	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010 1.000	rr) te (lbs/day) ction / Fraction and gpm) V-2 LIQUID W. FRACTION DISCHARGE 1.0 1.0 1.0 1.0	ASTE INPUTS COLLECTION TIME (hrs) 35.5 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS 1E4 1E4 1E4 1E4 1E4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary Auxiliary Building Sump Miscellaneous Sources Rx Plant Samples Lab Drains Cond. Demin.	ary To Second on Product Car gen Carry-Ove lensate Demine vaste Dilution FLOW RATE (gal/day) 40 200 700 35 400	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010 1.000 0.002	rr) te (lbs/day) ction / Fraction and gpm) // FRACTION DISCHARGE 1.0 1.0 1.0 1.0 1.0 1.0	ASTE INPUTS COLLECTION 1 TIME (hrs) 35.5 35.5 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS IE4 IE4 IE4 IE4 IE4 IE4	
Prima Fissio Halo Cond Radw STREAM Containment Sump Auxiliary ** Building Sump Miscellaneous Sources Rx Plant Samples Lab Drains Cond. Demin. Rinse Water	ary To Second on Product Car gen Carry-Ove lensate Deminovaste Dilution FLOW RATE (gal/day) 40 200 700 35 400 2685	ousand lbs/h lary Leak Rat rry-Over Frac er Fraction eralizer Flow Flow (thousa B FRACTION OF PCA 1.000 0.100 0.010 1.000 0.002	rr) te (lbs/day) ction / Fraction and gpm) ////////////////////////////////////	ASTE INPUTS COLLECTION 1 TIME (hrs) 35.5 35.5 35.5 35.5 35.5 35.5 35.5 35.5 35.5	DELAY TIME (hrs) 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	I 1E3 1E3 1E3 1E3 1E3 1E3	FACTO CsRb 1E4 1E4 1E4 1E4 1E4 1E4	100.000 .001 .010 .700 7.800 MINATION ORS OTHERS 1E4 1E4 1E4 1E4 1E4 1E4 1E4 1E4	

•

۰.

١

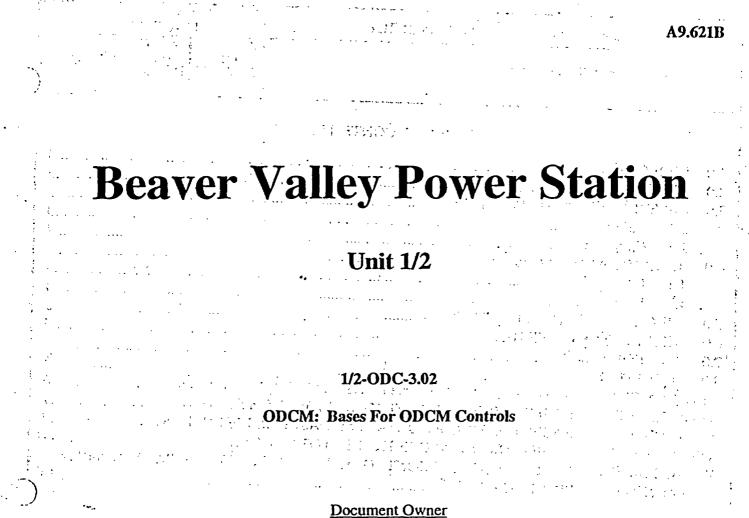
· ·

Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.01
le:	Unit: 1/2	Level Of Use: General Skill Refere
DCM: Dispersion Calculational Procedure and Source Term Inputs	Revision:	Page Number: 11 of 12
ATTACHMENT C	<u> 0 </u>	
Page 1 of 1		
GASEOUS SOURCE TERM INPUTS	5	
TABLE B:2a INPUTS TO SWEC GASIBB CODE FOR GENERATION OF BV-1 GASI	OUS SOUR	CE TERM MIXES
BV-1 PWR INPUTS	<u>.</u>	VALUE
Thermal Power Level (megawatts)	in a start a st	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)		100.000
Total Mass Of Secondary Coolant (thousand lbs)		2000.000
Mass Of Water In Steam Generator (thousand lbs)	. :	298.000
Blowdown Rate (thousand lbs/hr)	•	52.000
Primary To Secondary Leak Rate (lbs/day)	· · · · · ·	100.000
Fission Product Carry-Over Fraction	· · ·	.001
Halogen Carry-Over Fraction	· · · · ·	.010
Condensate Demineralizer Flow Fraction Radwaste Dilution Flow (thousand gpm)		0.000 15.000
BV-1 GASEOUS WASTE INPUTS		VALUE .
There Is Not Continuous Stripping Of Full Letdown Flow	-	
There is not continuous surpping of Fun Ledowit Flow		39.000
Hold Up Time For Xenon (days)		2.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days)		
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day)		160.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days)	· · · · ·	7.5E-3
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction		7.5E-3 0.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction	· · · · · · · · · · · · · · · · · · ·	7.5E-3 0.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction	· · · · · · · · · · · · · · · · · · ·	7.5E-3 0.000 1.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft)		7.5E-3 0.000 1.000 1.000 1.800
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) Frequency Of Primary Coolant Degassing (times/yr)		7.5E-3 0.000 1.000 1.000 1.800 2.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day)		7.5E-3 0.000 1.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) Frequency Of Primary Coolant Degassing (times/yr) Primary To Secondary Leak Rate (lb/day) <u>There Is A Kidney Filter</u>		7.5E-3 0.000 1.000 1.000 1.800 2.000 .100.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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)		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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)		7.5E-3 0.000 1.000 1.000 1.800 2.000 .100.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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>		7.5E-3 0.000 1.000 1.000 1.800 2.000 .100.000 2.000 8.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 (casflio) In Steam Generator		7.5E-3 0.000 1.000 1.000 1.800 2.000 .100.000 2.000 8.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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)*	i di senti di senti 19 setto di di senti 19 setto di di senti 19 setto di senti 19 setto di senti	7.5E-3 0.000 1.000 1.000 1.800 2.000 .100.000 2.000 8.000 0.010 4.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 8.000 0.010 4.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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)*		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 0.010 4.000 1.000 1.000
 Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 Iodine Release Fraction Steam Leak To Turbine Building (lbs/hr) 		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 4.000 4.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 0.010 4.000 1.000 1.000 1.000 1.000 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.010 0.0000 0.00000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent Fraction Iodine Released From Main Condensate Air Ejector		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 0.010 4.000 1.000 1.000 1.000 1.000 1.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 0.010 4.000 1.000 1.000 1.000 1.000 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.010 0.0000 0.00000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.000
Hold Up Time For Xenon (days) Hold Up Time For Krypton (days) Primary Coolant Leak To Auxiliary Building (lb/day) Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction Auxiliary Building Charcoiodine Release Fraction Auxiliary Building Particulate Release Fraction Containment Volume (million cu-ft) 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 Steam Leak To Turbine Building (lbs/hr) Fraction Iodine Released From Blowdown Tank Vent Fraction Iodine Released From Main Condensate Air Ejector		7.5E-3 0.000 1.000 1.000 1.800 2.000 2.000 2.000 8.000 0.010 4.000 1.000 1.000 1.000 1.000 0.010 0.010 0.010 0.010 0.010 0.010 0.000 0.010 0.0000 0.00000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 0.000

Beaver Valley Power Station	Procedure N	
	L	1/2-ODC-3.01
	Unit:	Level Of Use:
	1/2	General Skill Reference
OCM: Dispersion Calculational Procedure and Source Term Inputs	Revision:	Page Number:
	<u> </u>	12 of 12
ATTACHMENT C		·
Page 2 of 2		
GASEOUS SOURCE TERM INPUTS	1 +	
TABLE B:2b		
INPUTS TO SWEC GASIBB CODE FOR GENERATION OF BV-2 GASE	OUS SOUR	CE TERM MIXES
•		
BV-2 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 Steam In Each Steam Generator (thousand los) Mass Of Liquid In Each Steam Generator (thousand lbs)		100.000
Total Mass Of Secondary Coolant (thousand lbs)		2000.000
		298.000
Mass Of Water In Steam Generator (thousand lbs)		
Blowdown Rate (thousand lbs/hr)		22.300
Primary To Secondary Leak Rate (lbs/day)		100.000
Fission Product Carry-Over Fraction		.001
Halogen Carry-Over Fraction		.010
Condensate Demineralizer Flow Fraction		.700
Radwaste Dilution Flow (thousand gpm)		7.800
BV-2 GASEOUS WASTE INPUTS		VALUE
There Is Not Continuous Stripping Of Full Letdown Flow		····
Hold Up Time For Xenon (days)		45.800
Hold Up Time For Krypton (days)		2.570
Primary Coolant Leak To. Auxiliary Building (lb/day)		160.000
		7.5E-3
Auxiliary Building Leak Iodine Partition Factor Gas Waste System Particulate Release Fraction		0.000
		0.100
Auxiliary Building Charcolodine Release Fraction		
Auxiliary Building Particulate Release Fraction		0.010
Containment Volume (million cu-ft)	ı	1.800
Frequency Of Primary Coolant Degassing (times/yr)		2.000
Primary To Secondary Leak Rate (lb/day)		100.000
There Is A Kidney Filter		<u> </u>
Containment Atmosphere Cleanup Rate (thousand cfm)		20.000
Purge Time Of Containment (hours)		• 8.000
There Is Not A Condensate Demineralizer		_ · · ·
Iodine Partition Factor (gas/liq) In Steam Generator		0.010
Frequency Of Containment Building High Vol Purge (times/yr)*		4.000
		1.000
Containment Volume Purge Iodine Release Fraction		1.000
Containment Volume Purge Iodine Release Fraction		
Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction		1700.000
Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction Steam Leak To Turbine Building (lbs/hr)		
Containment Volume Purge Iodine Release Fraction Containment Volume Purge Particulate Release Fraction		1700.000 0.000 0.270

*2 cold and 2 hot purges

•



Manager, Radiation Protection

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

Beav	er Valley Po	ower Station	Procedure Nu	umber: 1/2-ODC-3.02
			Unit:	Level Of Use:
DCM: Bases For O	DCM Controls		1/2 Revision:	General Skill Reference Page Number:
				2 of 13
		TABLE OF CONTENTS	2	
1.0 PURPOSE	••••••		•••••••	
2.0 SCOPE 3.0 REFERENCES		MENTS	•••••••••••••••••••••••••••••••••••••••	
		•••••••••••••••••••••••••••••••••••••••		
		•		
4.2 Forms	•••••	•••••••••••••••••••••••••••••••••••••••	• • • • • • • • • • • • • • • • • • • •	4
		TIONS		
		••••••		
		DCM CONTROLS: INS		
		DCM CONTROLS: LIQ		
ATTACHMENT C	•	DCM CONTROLS: GA		
ATTACHMENT D	BASES FOR O	DCM CONTROLS: TO	FAL DOSE	
ATTACHMENT E		DCM CONTROLS: RAI		
MONITORING	G PROGRAM (RI	EMP)	• • • • • • • • • • • • • • • • • • • •	
a				
•		•	•	
		·	•	
		· · · · ·	•	
		· · · ·	•	
			•	
•		· · ·		
•			•	
•			•	
•			•	
•				
*			• • •	· · · · · · · · · · · · · · · · · · ·
÷	· · · · · · · · · · · · · · · · · · ·			
*			•	
*	· ·			
*			•	
* *	· · ·			
* -				
* * 10	· · · · · · · · · · · · · · · · · · ·			
*				
40	· · · · · · · · · · · · · · · · · · ·			
				-

LI.

Beaver Valley Power Station	Proced	lurc Nu	mber: 1/2-ODC-3.02
Title:	Uait:		Level Of Use:
ODCM: Bases For ODCM Controls	<u> </u>	<u>2</u>	General Skill Referen Page Number:
			<u>3 of 13</u>
1.0 <u>PURPOSE</u>			· · · ·
· · ·			
1.1 This procedure contains the Bases for the ODCM Controls tha Bases Section of the Technical Specification per Unit 1/2 Ame			
in accordance with Generic Letter 89-01 and NUREG-1301 (G			
Supplement No. 1). ^(3.1.5, 3.2.10)			
1.1.1 Prior to issuance of this procedure, these items were locate	din A		dir Doftha ald
ODCM.		hheu	
••			
1.2 This procedure also contains the Bases for the ODCM Controls Instrumentation) that were duplicated from the Bases Section of			
Instrumentation) that were duplicated from the Bases Section of per Unit 1/2 Amendments 1A-246/2A-124, and in accordance	vith N	URE	G-1431. ^(3.1.6, 3.2.11)
		•	·· · ·
1.3 This procedure also contains the Bases for the ODCM Controls Activity Limits and for Gas Decay/Storage Tank Activity Limit	-	-	-
the Bases Section of the Technical Specification per Unit 1/2 A			
and in accordance with NUREG-1431. ^(3.1.7, 3.2.11)	, -		
2.0 SCOPE ¹⁴	••••	•••	
	- f.;	· · ·	
2.1 This procedure is applicable to all station personnel that are qu	alified	to pe	rform activities as
described and referenced in this procedure.	• •	, <i>•</i>	
3.0 <u>REFERENCES AND COMMITMENTS</u>	•		· · · ·
3.1 <u>References</u>			1
	· ·		
3.1.1 1/2-ODC-2.01, ODCM: Liquid Effluents		••••	an an tha
3.1.2 1/2-ODC-2.02, ODCM: Gaseous Effluents			
	.		tur ta second
3.1.3 1/2-ODC-3.03, ODCM: Controls for RETS and REMP Pr	-		
3.1.4 1/2-ADM-1640, Control of the Offsite Dose Calculation N	lanual	••	
3.1.5 Unit 1/2 Technical Specification 6.8.6, including Amendm			
175/2A-37), Implemented August 7, 1995	cnts I		
3.1.6 Unit 1/2 Technical Specification 3.3.3.1, including Amend	ments	1A-2	46/2A-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.		2002	•
3.1.7 Unit 1/2 Technical Specifications 3.11.1.4, 3.11.2.5 and 6. 1A-250/2A-130 (LAR 1A-291/2A-163), Implemented Aug	ust 7,		
	just 7,		· ·
1A-250/2A-130 (LAR 1A-291/2A-163), Implemented Aug	just 7,		-

	Beaver Valley Power Station	Procedure N	•
· · · · · · · · · · · · · · · · · · ·			<u>1/2-ODC-3.02</u>
	ases For ODCM Controls	Unit:	Level Of Use: General Skill Reference
	ases for operat controls	Revisioa:	Page Number:
		<u> </u>	4 of 13
3.2 Co	mmitments		,
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 Doses Of Reactor Effluents For The Purpose Of Evaluating C Appendix I, Revision 1, October, 1977		
3.2.6	Regulatory Guide 1.111, Methods For Estimating Atmo Dispersion of Gaseous Effluents In Routine Releases F Reactors, Revision 1, July, 1977	-	
3.2.7	Regulatory Guide 1.113, Estimating Aquatic Dispersion And Routine Reactor Releases For The Purpose Of Imp 1977		
3.2.8	NUREG-0133, Preparation of Radiological Effluent Te Nuclear Power Plants, October 1978	chnical Speci	fications for
3.2.9	NUREG-0737, Clarification of TMI Action Plan Requi	rements, Octo	ber, 1980
3.2.10	NUREG-1301, Offsite Dose Calculation Manual Guida Effluent Controls For Pressurized Water Reactors (Gen No. 1)		-
3.2.11	NUREG-1431, Standard Technical Specifications - We	stinghouse Pla	ants Specifications
4.0 <u>RE</u>	CORDS AND FORMS		
4.1, <u>Re</u>	cords		
4.1.1	Any calculation supporting ODCM changes shall be do retrievable document (eg; letter or calculation package) number.		
4.2 <u>Fo</u>	<u>ms</u>		
4.2.1	None		
···			

•

•

•

LI.

Beaver Valley Power Station		Procedure Number: 1/2-ODC-3.02	
Title: ODCM	1: Bases For ODCM Controls	Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Refere Page Number: 5 of 13
5.0	PRECAUTIONS AND LIIMITATIONS	<u></u>	
5.1	The numbering of each specific ODCM Bases contained be sequential. This is intentional, as all ODCM Bases nu were transferred from the Technical Specifications. This the amount of plant procedure changes and to eliminate a numbering changes.	mbers remained was done in an	the same when they effort to minimize
6.0	ACCEPTANCE CRITERIA	e e e e e e e e e e e e e e e e e e e	
6.1	Any change to this procedure shall contain sufficient just maintain the level of radioactive effluent control required 190, 10 CFR 50.36a, and Appenidx I to 10 CFR 50, and r reliability of effluent dose or setpoint calculation. ^(3:2.10)	by 10 CFR 20.1	302, 40 CFR Part
6.1	All changes to this procedure shall be prepared in acc and 1/2-ADM-1640. ^(3.1.4)	cordance with 1/	2-ADM-0100 ^(3.1.8)
6.1	All changes to this procedure shall be reviewed and a ADM-0101 ^(3.1.9) and 1/2-ADM-1640. ^(3.1.4)	approved in acco	rdance with 1/2-
7.0	PREREQUISITES		
7.1 .	The user of this procedure shall be familiar with ODCM s	structure and cor	itent.
8.0	PROCEDURE		
8.1 8.2	See ATTACHMENT A for a complete description of Bas with Instrumentation. See ATTACHMENT B for a complete description of Bas with Liquid Effluents.	es for ODCM C	· · ·
8.3	See ATTACHMENT C for a complete description of Bas with Gaseous Effluents.	es for ODCM C	ontrols associated
8.4	See ATTACHMENT D for a complete description of Bas with Total Dose.		ontrols associated
8.5	See ATTACHMENT E for a complete description of Bas with the Radiological Environmental Monitoring Program		ontrols associated
	-END-		
			-
		•	-

· · · · ·	Beaver Valley Power Station	Procedure N	Procedure Number:		
		1/2-ODC-3.02			
itle:	ses For ODCM Controls	Uait: 1/2	Level Of Use: General Skill Reference		
		Revision:	Page Number:		
·			6 of 13		
	ATTACHMENT A	· · · · · · · · · · · · · · · · · · ·			
	Page 1 of 1		•		
	BASES FOR ODCM CONTROLS: INST	RUMENTATIO	V		
-					
3/4.3.3.1	RADIATION MONITORING INSTRUMENTATIO	N			
	The OPERABILITY of the radiation monitoring		•		
	levels are continually measured in the areas serv				
	alarm or automatic action is initiated when the r	adiation level trip	setpoint is exceeded;		
	and 3) sufficient information is available on sele	cted plant parame	ters to monitor and		
	assess these variables following an accident. Th				
	recommendations of NUREG-0737. ^(3.2.9)				
	· · · · · · · · · · · · · · · · · · ·	· · · ·	. ,		
3/4.3.3.9	RADIOACTIVE LIQUID EFFLUENT MONITO	ORING INSTRUI	MENTATION		
		· · · · ·			
	The radioactive liquid effluent instrumentation is	s provided to mor	itor and control, as		
	applicable, the releases of radioactive materials i	•	-		
	potential releases of liquid effluents. The alarm				
	be calculated in accordance with Section 1 of thi				
	will occur prior to exceeding the limits of 10 CF		-		
·	use of this instrumentation is consistent with the	,			
	Criteria 60, 63, and 64 of Appendix A to 10 CFI				
		c cut 50.			
3/4.3.3.10	RADIOACTIVE GASEOUS EFFLUENT MON	ITTORING INSTE	RUMENTATION		
	The radioactive gaseous effluent instrumentation	n is provided to m	onitor and control, as		
	applicable, the releases of radioactive materials i	· · · · · · · · · · · · · · · · · · ·			
	potential releases of gaseous effluents. The alar	0	0		
	shall be calculated in accordance with Section 2	• •			
	alarm/trip will occur prior to exceeding the limit				
	instrumentation also includes provisions for mor				
• ,		— ·	•		
	concentrations of potentially explosive gas mixt				
* .•	The OPERABILITY and use of this instrumenta				
	of General Design Criteria 60, 63, and 64 of App	pendix A to 10 CF	^A R Part 50. ^(3.2.1, 3.2.2)		
		5 - C			
		. :			
		• •	· · ·		
		· · ·			
		· · · ·	· · ·		

.

В	Beaver Valley Power Station	Procedure N	Number: 1/2-ODC-3.02
Title:	For ODCM Controls	Unit:	Level Of Use: General Skill Reference
ODCIVI. Dases	TO ODCM COMPOS	Revision:	Page Number: 7 of 13
	ATTACHMENT B	·	
	Page 1 of 2 BASES FOR ODCM CONTROLS: LIQUID EF	FLUENT	S
		- * ·	
3/4.11.1:1	LIQUID EFFLUENT CONCENTRATION		
J/4.11.1.1		•	
	This CONTROL is provided to ensure that the concentral released in Liquid waste effluents from the site to unrest times the EC's specified in 10 CFR Part 20, Appendix B Column 2. This limitation provides additional assurance materials in bodies of water outside the site will result in Section II.A design objectives of Appendix I, 10 CFR P the limits of 10 CFR Part 20.1302 to the population. The dissolved or entrained noble gases is based upon the ass controlling radioisotope and its MPC in air (submersion concentration in water using the methods described in Ir Radiological Protection (ICRP) Publication 2. ^(3.2.1, 3.2.2)	(20.100) that the e that the exposur art 50, to e concent umption t) was con	eas will be less than 10 1-20-2401), Table 2, levels of radioactive e within (1) the an individual and (2) tration limit for that Xe-135 is the everted to an equivalent
3/4.11.1.2	LIQUID EFFLUENT DOSE This CONTROL is provided to implement the requirem IV.A of Appendix I, 10 CFR Part 50. The Limiting Con- implements the guides set forth in Section II.A of Appen provide the required operating flexibility and at the same forth in Section IV.A of Appendix I to assure that the re- liquid effluents will be kept "as low as is reasonably ach sites with drinking water supplies which can be potentia there is reasonable assurance that the operation of the fa- radionuclide concentrations in the finished drinking water provide the function of the fa- requirements of 40 CFP. 141. The dose calculations in the	dition for dix I. The time impleases of ievable." Ily affected cility will er that arc	r Operation he ACTION statements plement the guides set radioactive material in Also, for fresh water ed by plant operations, not result in e in excess of the
**. *	requirements of 40 CFR 141. The dose calculations in t implement the requirements in Section III.A of Appendi guides of Appendix I is to be shown by calculational pro data such that the actual exposure of an individual throu unlikely to be substantially underestimated. The equation ODC-2.01 for calculating the doses due to the actual rela- materials in liquid effluents are consistent with the meth Guide 1.109, and Regulatory Guide 1.113. NUREG-012 calculations consistent with Regulatory Guides 1.109 an 3.2.8)	x I that co occdures I gh appropons specif case rates odology p 33 provid	onformance with the based on models and priate pathways is ied in procedure1/2- of radioactive provided in Regulatory les methods for dose
	This CONTROL applies to the release of liquid effluent Station, Unit No. 1 or Unit No. 2. These units have shar the liquid effluents from the shared system are proportion that system.	ed radwa	ste treatment systems,

يرار المعجا وتعروه القيرة الع

•

• .

..

. .

. .

•

	Beaver Valley Power Station	1	Procedure Nu	
Title:		···	Units	1/2-ODC-3.02
	s For ODCM Controls		1/2 · ·	General Skill Reference
			Revision:	Page Number:
	ATTACHME	NED D		<u> </u>
	Page 2 of	-		
	BASES FOR ODCM CONTROL		FLUENTS	
3/4.11.1.3	LIQUID WASTE TREATMENT SYST	<u>EM</u>		
· · .	The CONTROL that the appropriate por provides assurance that the releases of ra kept "as low as is reasonably achievable. requirements of 10 CFR Part 50.36a, Ge 10 CFR Part 50 and design objective giv 50. The specified limits governing the u treatment system were specified as a suit forth in Section II.A of Appendix I, 10 C specification applies to Beaver Valley Po	dioactive mater " This specific neral Design Co en in Section II se of appropriate able fraction of FR Part 50, for	rials in liqu ation imple riterion 60 .D of Appe te portions f the dose d liquid efflu	id effluents will be ements the of Appendix A to endix I to 10 CFR Par of the liquid radwaste esign objectives set uents. This
3/4.11.1.4	LIQUID HOLDUP TANKS	•		
	concentrations would be less than the lin	nits of 10 CFR	Part 20. An	pendix B. Table 2.
من.	concentrations would be less than the lin Column 2, at the nearest potable water su unrestricted area.			
	Column 2, at the nearest potable water su			
.ن.م •	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
•	Column 2, at the nearest potable water su			
•	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
 	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
•	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			
• • • • • • • • • • • • • • • • • • •	Column 2, at the nearest potable water su			
• • • • • • • • • • • • • • • • • • •	Column 2, at the nearest potable water su			
	Column 2, at the nearest potable water su			

۰.

LI.

Beaver Valley Power Station

ODCM: Bases For ODCM Controls

Title:

Procedure Number:			
	1/2-ODC-3.02		
Unit:	Level Of Use:		
1/2	General Skill Reference		
Revision:	Page Number:		

9 of 13

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)

	Beaver Valley Power Station	Procedure N	Procedure Number:	
litle:		Unit: 1/2	Level Of Use: General Skill Reference	
JUCIVI: Base	s For ODCM Controls	Revision:	Page Number:	
	· ·	1	10 of 13	
	ATTACHMENT C			
	Page 2 of 3			
	BASES FOR ODCM CONTROLS: GASE	OUS EFFLUEN	rs	
3/4.11.2.3	DOSE, RADIOIODINES, RADIOACTIVE MA		ARTICULATE FORM	
	AND RADIONUCLIDES OTHER THAN NO	BLE GASES		
	This CONTROL is provided to implement the			
	This CONTROL is provided to implement the r			
	and IV.A of Appendix I, 10 CFR Part 50. The $(3.2.2)$		e me guides set forth in	
	Section II.C of Appendix I. ^(3.2.2)			
	The ACTION statements provide the required of	naroting flavili	ity and at the same	
•				
	time implement the guides set forth in Section I			
	releases of radioactive materials in gaseous effl			
	reasonably achievable." The calculational meth	•	•	
	requirements implement the requirements in Se	•	•	
• •	conformance with the guides of Appendix I be			
	based on models and data such that the actual e		-	
	appropriate pathways is unlikely to be substanti	· · · ·		
	methods in procedure 1/2-ODC-2.02 are for cal			
•	release rates of the subject materials are consist			
	Regulatory Guide 1.109, and Regulatory Guide			
• •• ••	for determining the actual doses based upon the			
•	conditions. The release rate specifications for r			
	particulate form, and radionuclides other than n			
	existing radionuclide pathways to man, in the u	nrestricted area.	The pathways which	
	are examined in the development of these calcu	lations are: 1) in	and the state of t	
	airborne radionuclides, 2) deposition of radion	uclides onto veg	ndividual innalation of	
	subsequent consumption by man, 3) deposition			
		onto grassy area	etation with	
			etation with as where milk animals	
	* and meat producing animals graze with consum	ption of the mill	etation with as where milk animals k and meat by man,	
	* and meat producing animals graze with consum and 4) deposition on the ground with subseque	ption of the mill nt exposure of m	etation with as where milk animals k and meat by man, nan. This CONTROL	
· · ·	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
• •	* and meat producing animals graze with consum and 4) deposition on the ground with subseque	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
· ·	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
tr	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
- 6 -	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
t.	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
t -	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
• • • •	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
t.	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
t .	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
£	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
. 4.	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
to	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	
t .	 and meat producing animals graze with consum and 4) deposition on the ground with subseque applies to radioactive material in particulate for gases released from Beaver Valley Power Static 	ption of the mill nt exposure of m m and radionucl	etation with as where milk animals k and meat by man, han. This CONTROL ides other than noble	

:

Title: ODCM: Bases For 3/4.11.2.4 <u>GAS</u>	Ver Valley Power Station ODCM Controls ATTACHMENT C Page 3 of 3 BASES FOR ODCM CONTROLS: GASEOU SEOUS RADWASTE TREATMENT SYSTEM	Unit: <u>1/2</u> Revision: 1	1/2-ODC-3.02 Level Of Use: General Skill Reference Page Number: 11 of 13
	Page 3 of 3 BASES FOR ODCM CONTROLS: GASEOU	JS EFFLUENT	11 of 13
-	Page 3 of 3 BASES FOR ODCM CONTROLS: GASEOU	JS EFFLUENT	Ś
•		•	~
Tha		V	
prov efflu imp App CFF syste Sect spec	CONTROL that the appropriate portions of the vides reasonable assurance that the releases of results will be kept "as low as is reasonably achies lements the requirements of 10 CFR Part 50.36 bendix A to 10 CFR Part 50, and design objective R Part 50. The specified limits governing the use ems were specified as a suitable fraction of the tions II.B and II.C of Appendix I, 10 CFR Part 50 iffication applies to gaseous radwaste from Bear Juit No. 2.	adioactive mate evable." This sp a, General Desi ve Section II.D se of appropriate dose design obj 50, for gaseous	erials in gaseous pecification ign Criterion 60 of of Appendix I to 10 e portions of the jectives set forth in effluents. This
Rest assu total two spec was	<u>I GASEOUS WASTE STORAGE TANKS</u> tricting the quantity of radioactivity contained in trance that in the event of an uncontrolled releas l body exposure to an individual located at the r hours immediately following the onset of the re- cified limit restricting the quantity of radioactivit specified to ensure that the total body exposure ained a suitable fraction of the reference value s	se of the tanks' one arest exclusion elease will not end the one of the one o	contents, the resulting on area boundary for exceed 0.5 rem. The each gas storage tank the postulated release
3/4.11.2.5 <u>BV-</u>	2 GASEOUS WASTE STORAGE TANKS		• • •
wast tank excl will cont	tricting the quantity of radioactivity contained in te storage tanks provides assurance that in the e ts' contents, the resulting total body exposure to lusion area boundary for two hours immediately not exceed 0.5 rem. The specified limit restrict tained in any connected group of gaseous waste ure that the total body exposure resulting from the	vent of an unco an individual lev following the d ting the quantity storage tanks w	ontrolled release of the ocated at the nearest onset of the release y of radioactivity was specified to

-- - -

· • · .

200

Procedure Number: 1/2-ODC-3.02	
Unit: 1/2	Level Of Use: General Skill Reference
Revision:	Page Number:
U	1/ Joit: 1/2

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)

Beaver Valley Power Station

ODCM: Bases For ODCM Controls

Title:

	Procedure Number:			
1/2-ODC-3.02				
ł	Unit:	Level Of Use:		
	1/2	General Skill Reference		
	Revision:	Page Number:		
	1	13 of 13		

ATTACHMENT E Page 1 of 1

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) RTL #A9.621B

Beaver Valley Power Station

Unit 1/2

1/2-ODC-3.03

ODCM: Controls for RETS and REMP Programs

(4) A Press Market Constraint Constraint

Document Owner Manager, Radiation Protection

 Revision Number
 3

 Level Of Use
 General Skill Reference

 Safety Related Procedure
 Yes

(a) A set of the s

an an that the state of the state I have a state of the state of the

Beave	r Valley Power	Station	Procedure Nu	
Title:			Unit:	1/2-ODC-3.03 Level Of Use:
1 2 6 8 W			1/2	General Skill Reference
ODCM: Controls for	RETS and REMP Progra	ams	Revision:	Page Number:
			3	2 of 77
	TABI	E OF CONTENTS		
	•			
1.0 PURPOSE 2.0 SCOPE	•••••••••••••••••••••••••••••••••••••••		•••••	
		s		
7.0 PREREQUIST	ES			
8.0 PROCEDURE			•••••	7
		OPERATIONAL MODI	ES AND F	REQUENCY
NOTATION				
ATTACHMENT B		DEFINITIONS		
ATTACHMENT C	ODCM CONTROLS:	APPLICABILITY AND	SURVEIL	LANCE
REQUIREMEN				
ATTACHMENT D		RADIATION MONITO		
ATTACHMENT E		RETS INSTRUMENTA	TION FOI	RLIQUID
EFFLUENTS	23			
ATTACHMENT F		RETS INSTRUMENT H		
ATTACHMENT G		LIQUID EFFLUENT CO		
ATTACHMENT H	ODCM CONTROLS:	LIQUID EFFLUENT D		$\frac{1}{2}$
ATTACHMENT I		LIQUID RADWASTE		
ATTACHMENT J	ODCM CONTROLS:	LIQUID HOLDUP TAN		
ATTACHMENT K	ODOM CONTROLS:	GASEOUS EFFLUENT DOSE- NOBLE GASES	DOOR KI	۲۱E
ATTACHMENT L				
ATTACHMENT M		DOSE - RADIOIODINI GASEOUS RADWAST		
ATTACHMENT N		GASEOUS RADWAS I GAS STORAGE TANK		
ATTACHMENT O		•		
ATTACHMENT P		TOTAL DOSE REMP-PROGRAM RE		
ATTACHMENT Q ATTACHMENT R	ODCM CONTROLS:	REMP-PROGRAM RE	CORCEME ENICTIC	211 I.J
ATTACHMENT R ATTACHMENT S		REMP - INTERLABOR		
PROGRAM	73	REWIE - HALLREADUR		
ATTACHMENT T		ANNUAL REMP REPO	ידסר	71
ATTACHMENT I		ANNUAL RETS REPO		
		ANNUAL KEIS KEIC	/1\ 1 J	
				•.
•				
				-
1	•			

L**I**_

litk:		alley Power Station	Unit:	1/2-ODC-3.03 Level Of Use:
			1/2	General Skill Refere
DDCN	I: Controls for RETS	S and REMP Programs	Revision:	Page Number: 3 of 77
1.0	PURPOSE	· · · · · · · · · · · · · · · · · · ·		•.
1.1	Technical Specifica	udes selected Definitions and Tab ations and selected Applicability a ction 3/4 of the Technical Specific	and Surveillance Req	
, 1. 1	ODCM, and w	ce of this procedure, these items v ere added to this procedure for re ibed in the Technical Specification	ference purposes, ev	
1.2	(RETS) that were the	tains the controls for the Radiolog ransferred from the Technical Spe I in accordance with Generic Lette	ecifications per Unit	1/2 Amendments
1.2	2.1 Prior to issuand ODCM.	ce of this procedure, these items v	were located in Appe	ndix C of the old
1.3	Release Report and from the Technical accordance with Ge	tains the reporting requirements f I the Annual Radiological Environ Specifications per Unit 1/2 Amer eneric Letter 89-01 and NUREG- ce of this procedure, these items v	nmental Report that y ndments 1A-188/2A 1301. ^(3.2.10)	were transferred -70 and in
1.4	transferred from the	ntains the controls for Radiation M e Technical Specification per Uni UREG-1431. ^(3.2.11)	•	
1.5	Decay/Storage Tan	tains the controls for Liquid Hold k Activity Limits that were transf dment 250/130, and in accordance	ferred from the Tech	nical Specification
2.0	<u>SCOPE</u>	an a		
2.1		applicable to all station personnel renced in this procedure.	that are qualified to	•
3.0	REFERENCES A	ND COMMITMENTS		· · · ·
3.1	References	No de para condition de las des Construitos de las de las des	· · · · · · · · · · · · · · · · · · ·	• ,
3.	1.1 1/2-ODC-2.01	, ODCM: Liquid Effluents		
3.	1.2 1/2-ODC-2.02	2, ODCM: Gaseous Effluents		_ ,

	Beaver Valley Power Station	Procedure No	umber: 1/2-ODC-3.03
Title:		Unit: 1/2	Level Of Use: General Skill Refere
ODCM: C	ontrols for RETS and REMP Programs	Revision:	Page Number: 4 of 77
3.1.4	Unit 1/2 Technical Specification 6.8.6, including Ame 175/2A-137) Implemented August 7, 1995.	endments 188/7	0 (LAR 1A-
3.1.5	Unit 1/2 Technical Specification 3.3.3.1, including Ar 287/2A-159) Implemented April 11, 2002	mendments 246	/142 (LAR 1A-
3.1.6	Unit 1/2 Technical Specification 3.11.1.4, 3.11.2.5, 6. Amendments 250/130 (LAR 1A-291/2A-163) Implem		-
3.1.7	1/2-ADM-1640, Control of the Offsite Dose Calculati	on Manual	•
3.1.8	1/2-ADM-0100, Procedure Writer's Guide		
3.1.9	NOP-SS-3001, Procedure Review and Approval		
3.1.10	CR 981489, ODCM Table 4.11-2 Row A (Waste Gas Revise Appendix C of the ODCM (Table 4.11-2) to a when tritium samples are to be obtained for GWST di	dd clarification	
3.1.11	CR 981490, ODCM Table 4.11-2 Note e, and Related Procedures. CA-01, Revise Appendix C of the ODCM the proper tritium sample point.	· · · ·	h.
3.1.12	CR 993021, Apparent failure to test RM-1DA-100 tri No ODCM changes are required for this CR.	p function as re	equired by ODCM.
3.1.13	CR 001682, ODCM Action 28 Guidance. CA-02, Re (Table 3.3-13, Action 28) to differentiate actions asso Flow Rate Monitors vs. Sample Flow Rate Monitors.	ciated with Ino	
3.1.14	CR02-05711, TS and ODCM changes not reflected in CA-01, Revise 1/2-ODC-3.03 to add a requirement for notification of pending ODCM changes.		
3.1+15	CR03-06123, Enhance Table 3.3-6 of $1/2$ -ODC-3.03 Monitoring. CA-01, Revise Table 3.3-6 and Table 4. Channel 5 as an additional 2^{nd} PMM when the Unit 1 Effluent Monitors are Inoperable.	3-3 to allow us	e of Eberline SPIN
3.1.16	CR03-06281, Gaseous Tritium Sampling Required by for Chemistry. CA-01, Revise procedure Attachment Chemistry sampling of Gaseous Effluent Pathways to need sampled for compliance to ODCM Control 3.11	K Table 4.11- show which e	2 for RP & ffluent pathways

• · ·	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.03
		Unit: 1/2 Revision:	Level Of Use: General Skill Refere Page Number:
	ontrols for RETS and REMP Programs	3	<u> </u>
3.1.17	CR03-07487, Results of NQA Assessment of the Radiolo 01, Revise Calculation Package No. ERS-ATL-95-007 to Supply" per guidance presented in NUREG-0800 SRP 15 ODC3.03 Control 3.11.1.4 to update the activity limits for	Clarify the 5.7.3. CA-0	term "Surface Wate 5, Revise 1/2-
3.1.18	CR03-07668, Benchmark Effluent & Environmental Prog 13 th REMP/RETS Workshop. CA-01, Evaluate procedur reduce the amount of Effluent Samples obtained during a	grams VS P e Attachme	apers Presented at ent K Table 4.11-2 to
3.1.19	CR03-09959, RFA-Rad Protection Provide Clarification Sample. CA-01, Revise ODCM procedure 1/2-ODC-3.0 note c & note e) to allow sampling of the appropriate bui	3 Attachme	nt K (Table 4.11-2
3.2 <u>Co</u>	mmitments		· .
3.2.1	10 CFR Part 20, Standards for Protection Against Radiat	ion	. 1
3.2.2	10 CFR Part 50, Domestic Licensing of Production and U	Utilization H	Facilities
3.2.3	40 CFR Part 141		· *
3.2.4	40 CFR Part 190, Environmental Radiation Protection St Operations.	andards Fo	r Nuclear Power
3.2.5	Regulatory Guide 1.109, Calculation Of Annual Doses T Of Reactor Effluents For The Purpose Of Evaluating Con Appendix I, Revision 1, October 1977		
3.2.6	Regulatory Guide 1.111, Methods For Estimating Atmos Dispersion Of Gaseous Effluents In Routine Releases Fr Reactors, Revision 1, July 1977		
3.2.7	Regulatory Guide 1.113, Estimating Aquatic Dispersion And Routine Reactor Releases For The Purpose Of Impl 1977		
3.2.8	NUREG-0133, Preparation of Radiological Effluent Tec Nuclear Power Plants, October 1978	hnical Spec	ifications for
3.2.9	NUREG-0737, Clarification of TMI Action Plan Requir	ements, Oc	tober 1980
3.2.10	NUREG-1301, Offsite Dose Calculation Manual Guidar Effluent Controls For Pressurized Water Reactors (Gene No. 1)		
3.2.11	NUREG-1431, Standard Technical Specifications - Wes	tinghouse H	Plants Specifications

	Dogwon Wallow Dowon Clation	Procedure Nu	mber:	
	Beaver Valley Power Station	· · · · ·	<u>1/2-ODC-3.03</u>	
litle:		Uait:	Level Of Use:	
		1/2 Revision:	General Skill Reference Page Number:	<u> </u>
JDCM: C	Controls for RETS and REMP Programs	3	6 of 77	Ì
3.2.12	NUREG-0800, Standard Review Plan, Postulated Radioact Containing Tank Failures, July 1981	ive Releas	es Due to Liquid-	
3.2.13	Licensee Response to NRC Unresolved Item 50-334/83-30 Particle Distribution Evaluation showed that the Licensee r correction factors to determine particulate activity in sampl release pathways.	nust contir	ue to use	
4.0 <u>R</u>	ECORDS AND FORMS			
4.1 <u>R</u>	ecords			
4.1.1	Any calculation supporting ODCM changes shall be docum retrievable document (e.g.; letter or calculation package) w number.			
4.2 <u>F</u>	orms			
4.2.1	None			
5.0 <u>P</u>	RECAUTIONS AND LIMITATIONS			
O ir n T	The numbering of each specific ODCM Control, ODCM Surve ODCM Table contained in this procedure does not appear to be intentional, as all ODCM Control, ODCM Surveillance Require umbers remained the same when they were transferred from the his was done in an effort to minimize the amount of plant pro- liminate any confusion associated with numbering changes.	sequentia ement and ne Technic	l. This is ODCM Table al Specifications.	
b tł	The numbering of each specific ODCM Report contained in this e sequential. This is intentional, as all ODCM Report number mey were transferred from the Technical Specifications. This minimize the amount of plant procedure changes and to elimin with numbering changes.	rs remained was done in	i the same when n an effort to	
6.0 <u>A</u>	ACCEPTANCE CRITERIA			
n 1	Any change to this procedure shall contain sufficient justificati naintain the level of radioactive effluent control required by 10 90, 10 CFR 50.36a, and Appendix I to 10 CFR 50, and not ad eliability of effluent dose or setpoint calculation. ^(3.2.10)) CFR 20.1	302, 40 CFR Part	
6.1.1	All changes to this procedure shall be prepared in accordation and 1/2-ADM-1640. ^(3.1.7)	nce with 1/	'2-ADM-0100 ^(3.1.8)	•

÷

. .

•

•••••

:

litle:	Beaver Valley Power Station		
litle:			1/2-ODC-3.03
:		Unit: 1/2	Level Of Use: General Skill Reference
		Revision:	Page Number:
JDCM:	Controls for RETS and REMP Programs	3	7 of 77
6.1.	2 Pending changes to this procedure shall be provided to ap example, <u>IF</u> Control 3.11.1.1 is being changed, <u>THEN</u> the provided to the applicable station groups (i.e.; owner of th MATRIX of ODCM procedure 1/2-ODC-1.01. This will revise any affected procedures concurrent with the ODCM	proposed on procedure allow the s	changes shall be es), identified in the tation groups to
6.1.	All changes to this procedure shall be reviewed and appro SS-3001 ^(3.1.9) and 1/2-ADM-1640. ^(3.1.7)	oved in acco	ordance with NOP-
70	DEDECILICITES		2 1 1
7.0	PREREQUISITES		
7.1	The user of this procedure shall be familiar with ODCM struct	ture and co	ntent.
			1
8.0	PROCEDURE		
8.1	See ATTACHMENT A for a Table of Operational Modes and Notation.	a Table of	Frequency
8.2 ·	See ATTACHMENT B for a list of defined terms used throug	hout the O	DCM.
8.3	See ATTACHMENT C thru ATTACHMENT S for a complet Controls.	te description	on of all ODCM
8.4	See ATTACHMENT T for a description of the Annual Report Controls.	t required b	by the REMP
8.5	See ATTACHMENT U for a description of the Annual Report Controls.	t required l	by the RETS
	- END -		
		•	
	· ·		
	•		
			:
	t-		
		•. •.	

-

-ز

. .

Beave	er Valley Powe	r Station	·	Procedure Nu	mber: 1/2-ODC-3.03
itle:	•••			Uait:	Level Of Use: General Skill Refere
DCM: Controls for	RETS and REMP Prop	grams		1/2 Revision: 3	Page Number: 8 of 77
ODCM CON	A' NTROLS: OPERATIC	TTACHMENT A Page 1 of 2 DNAL MODES AN	ID FREQ	UENCY	
·	· · ·	<u>TABLE 1.1</u>		e. 	
	OPE	RATIONAL MOL	DES	,	
MODE	REACTIVITY CONDITION, K _{eff}	% RATED THERMAL POV	VER ⁽¹⁾		AGE COOLANT MPERATURE
1. Power Operation	≥0.99	>5%			≥350°F
2. Startup	≥0.99	≤5%	•		≥350°F
3. Hot Standby	<0.99	0			≥350°F
I. 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

L**I**...

(1)

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

(2)

Reover Volley	Power Station	Procedure Nu	• •
	TOwer Station	+ <u></u>	1/2-ODC-3.03
Title:		Unit: 1/2	Level Of Use: General Skill Referen
ODCM. Controls for DETS and D	EMD Drogroups	Revision:	Page Number:
ODCM: Controls for RETS and R		3	<u>9 of 77</u>
ODCM CONTROLS: O	ATTACHMENT A Page 2 of 2 PERATIONAL MODES AND FRE(QUENCY	NOTATION
	TABLE 1.2		
	FREQUENCY NOTATION	 ↓ 1 	
NOTATION	FREQUENCY	, •	
S .	At least once per 12 hours	1	•
D	At least once per 24 hours	•	
	At least once per 7 days	· · · · ·	
M	At least once per 31 days	· · · ·	
Q	At least once per 92 days		n ga an an gin sa
• SA	At least once per 184 days	, , , , , , ,	
R	At least once per 18 months	· · · ·	
• S/U P	Prior to each reactor startup Completed prior to each release	•	
N.A.	Not applicable		
and the second			
en e	an a	, t .	

مان به المان المعالية من المحكم المحكم ومنه ومنه المعالية من منه المحكم من المحكم - المحكم المح

۰.

)

•

Beaver Valley Power Station	Procedure N	4 · · · · · · · · · · · · · · · · · · ·
Tite:	Unit:	1/2-ODC-3.03
	1/2	General Skill Reference
ODCM: Controls for RETS and REMP Programs	Revision:	Page Number:
	3	10 of 77
ATTACHMENT B		
Page 1 of 3		
ODCM CONTROLS: DEFINITIO	ONS	
The defined terms of this section appear in capitalized type and arc CONTROLS.	e applicable th	roughout these
<u>ACTION</u> shall be those additional requirements specified as coroll CONTROL and shall be part of the CONTROLS.	lary statements	s to each principal
<u>CHANNEL CALIBRATION</u> shall be the adjustment, as necessary responds with the necessary range and accuracy to known values o monitors. The CHANNEL CALIBRATION shall encompass the alarm and/or trip functions, and shall include the CHANNEL FUN CALIBRATION may be performed by any series of sequential, ov that the entire channel is calibrated.	of the paramete entire channel ICTIONAL TI	er which the channel including the sensor an EST. The CHANNEL
<u>CHANNEL CHECK</u> shall be the qualitative assessment of channe observation. This determination shall include, where possible, con and/or status with other indications and/or status derived from ind measuring the same parameter.	mparison of th	e channel indication
CHANNEL FUNCTIONAL TEST shall be the injection of a simu to the primary sensor as practicable to verify OPERABILITY includes the sensor of the primary sensor as practicable to verify OPERABILITY includes the sensor of the sens		
<u>FREQUENCY NOTATION</u> specified for the performance of Survice correspond to the intervals defined in Table 1.2.	veillance Requ	irements shall
GASEOUS RADWASTE TREATMENT SYSTEM is any system radioactive gaseous effluents by collecting primary coolant system providing for delay or holdup for the purpose of reducing the total environment.	1 offgases fron	n the primary system an
<u>MEMBER(S) OF THE PUBLIC (10 CFR 20)</u> means any individure receiving an occupational dose. This definition is used to show C CONTROL that is based on 10 CFR Part 20.		
<u>MEMBER(S) OF THE PUBLIC (40 CFR 190)</u> means any individ the general environment , whether he may or may not also be exp associated with a nuclear fuel cycle. However, an individual is no PUBLIC during any period in which he is engaged in carrying out nuclear fuel cycle. This definition is used to show compliance to that is based on 40 CFR Part 190.	osed to radiati ot considered a t any operation	on in an occupation MEMBER OF THE which is part of the

•

1_

Beaver Valley Power Station itte: DDCM: Controls for RETS and REMP Programs ATTACHMENT B Page 2 of 3 ODCM CONTROLS: DEFINITIONS OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain	Uait: <u>1/2</u> Revisioa: <u>3</u>	1/2-ODC-3.03 Level Of Use: General Skill Reference Page Number: 11 of 77
ATTACHMENT B Page 2 of 3 ODCM CONTROLS: DEFINITIONS		Page Number:
ATTACHMENT B Page 2 of 3 ODCM CONTROLS: DEFINITIONS	<u>3</u>	
Page 2 of 3 ODCM CONTROLS: DEFINITIONS		
OFESITE DOSE CALCUI ATION MANUAL (ODCM) shall contain	1	
used in the calculation of offsite doses resulting from radioactive gased calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpe Environmental Radiological Monitoring Program. The ODCM shall a Effluent Controls and Radiological Environmental Monitoring Program Specification (TS) Section 6.8.6 and (2) descriptions of the information Annual Radiological Environmental Operating and Annual Radioactive are also required by the Administrative Controls Section of the TS <u>OPERABLE/OPERABILITY</u> A system, subsystem, train, component,	oints, and i lso contain ns required n that shou e Effluent	in the conduct of the (1) the Radioactive d by Technical and be included in the Release Reports that
have <u>OPERABILITY</u> when it is capable of performing its specified fur definition shall be the assumption that all necessary attendant instrume emergency electric power sources, cooling or seal water, lubrication or required for the system, subsystem, train, component, or device to perf capable of performing their related safety function(s).	nction(s). entation, co r other aux	Implicit in this ontrols, normal and iliary equipment that a
OPERATIONAL MODE shall correspond to any one inclusive combin power level, and average reactor coolant temperature specified in ATI		
<u>PURGE</u> or <u>PURGING</u> is the controlled process of discharging air or g temperature, pressure, humidity, concentration, or other operating con- replacement air or gas is required to purify the confinement.		
RATED THERMAL POWER shall be a total reactor core heat transfe 2689 MWt.	r rate to th	e reactor coolant of
<u>REPORTABLE EVENT</u> shall be any of those conditions specified in a	Section 50	.73 to 10 CFR Part 50
SHUTDOWN means reactor power change to 0% power.		
SITE BOUNDARY shall be that line beyond which the land is neither controlled by the licensee. The Figure for Liquid Effluent Site Bound The Figure for Gaseous Effluent Site Boundary is contained in 1/2-OI	ary is conta	

<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.

۰ ۰

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

Be	aver Valley Power	Station		Procedure Nu	imber: 1/2-ODC-3.03
Title:	s for RETS and REMP Progr			Unit: 1/2 Revision: 3	Level Of Use: General Skill Reference Page Number: 12. of 77
	AT	TACHMENT B	,	I	
	ODCM CON	Page 3 of 3 TROLS: DEFIN	TTIONS		
gaseous radioiod exhaust gases the particulates from considered to ha	EXHAUST TREATMENT line or radioactive material ir rough charcoal absorbers and the gaseous exhaust stream ve any effect on noble gas ef are not considered to be VE	n particulate form l/or HEPA filters prior to the releas fluents). Enginee	in efflue for the p se to the red Safe	ents by pas ourpose of a environme ty Feature	sing ventilation or vent removing iodines or ent (such a system is not (ESF) atmospheric
temperature, pre	e controlled process of discha ssure, humidity, concentratio or gas is not provided or requ ITING process.	on or other operati	ing cond	itions, in s	uch a manner that
	. •				
					•
•	¢				
	· ·				
	. · ·				·

.

•-

11

.

	Derest	
Beaver Valley Power Station	Procedure N	1/2-ODC-3.03
Title:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Controls for RETS and REMP Programs	Revision:	Page Number:
ATTACHMENT C	<u> </u>	13 of 77
Page 1 of 2		
ODCM CONTROLS: APPLICABILITY AND SURVEILLA	ANCE REQ	UIREMENTS
		· · · · :
CONTROLS: APPLICABILITY		·
3.0.1 Compliance with the ODCM CONTROLS in the succeeding during the OPERATIONAL MODES or other conditions spe failure to meet the ODCM CONTROL, the associated ODCM met.	cified therei	n; except that upon
3.02 Non-compliance with a ODCM CONTROL shall exist when CONTROL and associated ODCM ACTION requirements ar intervals. If the ODCM CONTROL is restored prior to expir completion of the ODCM ACTION requirements is not require	e not met wation of the	ithin the specified time
3.0.3 When a ODCM CONTROL is not met except as provided in requirements, within one hour action shall be initiated to place ODCM CONTROL does not apply by placing it, as applicable	e the unit in	
 At least HOT STANDBY within the next 6 hours, At least HOT SHUTDOWN within the following 6 h At least COLD SHUTDOWN within the subsequent 		
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 CONT requirements are stated in the individual ODCM CONTROL	nce with the ROL. Exce	specified time limits as
3.0.4 Entry into an OPERATIONAL MODE or other specified conconditions for the ODCM CONTROL are not met and the as shutdown if they are not met within a specified time interval. MODE or specified condition may be made in accordance when conformance to them permits continued operation of the time. This provision shall not prevent passage through or to required to comply with ODCM ACTION requirements. Existent in the individual ODCM CONTROLS.	sociated OD . Entry into ith ODCM A ne facility fo OPERATIC	CM ACTION requires a an OPERATIONAL ACTION requirements r an unlimited period of NAL MODES as
		5 - 7
		-
1		:

÷

.

Beaver Valley Power Station	Unit:	1/2-ODC-3.03
Title:	Unit:	The second s
ODCM: Controls for RETS and REMP Programs	Revision:	General Skill Reference
	3	14 of 77
ATTACHMENT C		1
Page 2 of 2 ODCM CONTROLS: APPLICABILITY AND SURVI	FILLANCE REO	IIREMENTS
· ·		
CONTROLS: SURVEILLANCE REQUIREMENTS		
4.0.1 Surveillance Requirements shall be met during the OPE specified for individual ODCM CONTROLS unless oth Surveillance Requirement.		
4.0.2 Each ODCM Surveillance Requirement shall be perform with a maximum allowable extension not to exceed 25%		
4.0.3 Failure to perform a ODCM Surveillance Requirement interval (defined by ODCM CONTROL 4.0.2), shall co OPERABILITY requirements for a ODCM CONTROL requirements are applicable at the time it is identified th has not been performed. The ODCM ACTION requirement to permit the completion of the ODCM surveillance who ODCM ACTION requirements are less than 24 hours. On have to be performed on inoperable equipment.	nstitute non-comp . The time limits nat an ODCM Sur ments may be dela ten the allowable of	liance with the of the ODCM ACTION veillance Requirement yed for up to 24 hours outage time limits of the
4.0.4 Entry into an OPERATIONAL MODE or other specific ODCM Surveillance Requirement(s) associated with the within the stated ODCM surveillance interval or as othe prevent passage through or to OPERATIONAL MODE ACTION requirements.	e ODCM CONTR erwise specified.	OL has been performed. This provision shall not
•		
	•	
e en		
 Mature 	•	
·.		
	•	
		:

	Beave	r valle	y Pov	ver Stat	tion -	·			2-0DC		
ītle:	, t	• • •					Unit:		Level Of U General	Jse: Skill Re	eferen
DCM: Con	trols for l	RETS and	REMP J	Programs		·· , ·	Revisio		Page Num	ber:	
				ATTACH	IMENT		3			<u>5 of 7</u>	L
					1 of 8						
	ODCM C	ONTROL	S: RAE	DIATION N	MONITC	RING I	ISTRUM	ENT/	ATION		
											•
CONTROLS	S: RADL	ATION M	ONITOI	VING (HIG	HRAN	GE INST	RUMEN	TATI	ON)		,
			·		·. ·						-
3.3.3.1			-	instrumen		•				all be	
•	OPER	ABLE with	h their a	larm/trip se	etpoints v	vithin the	e specifie	ed limi	ts.		
APPLICAB	ILITY:	As shown	ı in Tabl	e 3.3-6.					•.	. ,	•
	· · · ·		•	· · · · · ·	· · · ·			•		•	4
ACTION:				* <u>*</u> *	•		•			•	
a.				ing channe							,
				Table 3.3-6	5, adjust (he setpo	int to wit	hin the	e limit	within 4	4 hou
• • • • • • • •	or dec	lare the cha	annel ind	operable.	• •					·. · ·	,
b.	With o	one or mor	e radiati	on monitor	ring chan	nels inor	erable, t	ake the	ACTI	ON sho	wn i
									•		•
•	ODCN	A Control 3	3.3.3.1, '	Table 3.3-6	5.		• •		. •		1
с.			-			not appli	cable.	•	· •		
• • •	The p	rovisions o	f ODCN	Table 3.3-6 I Control 3		not appli	cable.	· · · · · · · · · · · · · · · · · · ·			•
• • · · · ·	The p	rovisions o	f ODCN			not appli	cable.				
SURVEILL	The pi ANCE R	rovisions o EQUIREM	f ODCN IENTS	1 Control 3	3.0.3 are			,,, ,,,		2 	
SURVEILL	The pr ANCE R Each 1	rovisions o EQUIREM	f ODCM IENTS	1 Control 3	3.0.3 are	hannel s	hall be de			•	BLE
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe	rovisions o EQUIREM radiation m	f ODCM	1 Control 3	3.0.3 are	hannel s	hall be do	LIBRA	ATION	and	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	1 Control 3	3.0.3 are entation c CHECK operatio	hannel s , CHAN ns during	hall be do NEL CA ; the mod	LIBR / les and	ATION l at the	and	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	A Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBRA les and	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	A Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBRA les and	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	A Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBRA les and	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	d Control 3 g instrume HANNEL IAL TEST I 3.3.3.1, T	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBRA les and	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The pr ANCE R Each r the pe CHAN	rovisions o EQUIREM radiation m rformance NNEL FUN	f ODCN IENTS monitorin of the C NCTION	d Control 3 g instrume HANNEL IAL TEST I 3.3.3.1, T	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBRA les and	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCN IENTS nonitorin of the C NCTION I Contro	d Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCN IENTS nonitorin of the C NCTION I Contro	d Control 3 g instrume HANNEL IAL TEST I 3.3.3.1, T	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCN IENTS nonitorin of the C NCTION I Contro	d Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCN IENTS nonitorin of the C NCTION I Contro	d Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCN IENTS nonitorin of the C NCTION I Contro	d Control 3	3.0.3 are entation c CHECK operatio Table 4.3	hannel s , CHAN ns during 3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCM IENTS nonitorin of the C NCTION I Contro	a Control 3 In the second seco	3.0.3 are entation of CHECK operation Table 4.3	hannel s , CHAN ns during -3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	
SURVEILL 4.3.3.1	The provide the provident of the provide	rovisions o EQUIREM radiation m rformance NNEL FUN n in ODCM	f ODCM IENTS nonitorin of the C NCTION I Contro	d Control 3	3.0.3 are entation of CHECK operation Table 4.3	hannel s , CHAN ns during -3.	hall be do NEL CA ; the mod	LIBR A	ATION l at the	and frequer	

÷

Beaver Valley		r Station		Procedure Num			1
				1/ Unit:	2-ODC-3.03 Level Of Use:	·	-
				1/2	General Skill	Reference	Ļ
DCM: Controls for RETS and R	EMP Prog	grams		Revision:	Page Number: _16 of	77 . ·	T
	A	TACHMEN	ו ר D				1
		Page 2 of 8					
ODCM CONTROLS	: RADIA'	FION MONIT	ORING INST	RUMENT	ATION		
		TABLE 3.3-	-6				
BV-1 RAD	IATION N	ONITORING	_	ENTATION	ſ .		
Pri = Primary Inst			lanned Metho		<i>c</i> >		
•	MINIMUM				OMINAL		
• •		APPLICABLE	CETDOINE		SUREMENT		
	PERABLE	<u>MODES</u>	SETPOINT	_	RANGE	ACTION	·
1. Noble Gas Effluent Monitors - SPI a. Reactor Building/SLCRS (CV-1;		Elevated Releas	e)				ł
Mid Range Noble Gas	(1)	1, 2, 3, & 4	<798 cpm	10-3-	$10^3 \mathrm{uCi/cc}^{(2)}$	35	k
Pri: (RM-1VS-110 Ch 7)			_				(ľ
1st PMM: (RM-1VS-112 SA-10) 2nd PMM: (RM-1VS-107B, or 110		•.					ŀ
3rd PMM: Grab Sampling every 1							
High Range Noble Gas	(1)	1, 2, 3, & 4	N/A	10 ⁻¹ -	$\cdot 10^5 \text{ uCi/cc}^{(2)}$	35	
Pri: (RM-1VS-110 Ch 9) 1st PMM: (RM-1VS-112 SA-9							Ę
2nd PMM: (RM-1VS-107B, or 110) Ch 5)	-					Å
3rd PMM: Grab Sampling every 1	2 hours		<u>.</u>				ั้า
b. Auxiliary Building Ventilation S	-			10-3	-10^{3} uCi/cc ⁽²⁾	35	
<u>Mid Range Noble Gas</u> Pri: (RM-1VS-109 Ch 7)	(1)	1, 2, 3, & 4	<u>≤</u> 669 cpm	10	-10 UCDCC	55	X
1st PMM: (RM-1VS-111 SA-10)							(\mathbf{p})
2nd PMM: (RM-1VS-101B, or 10) 3rd PMM: Grab Sampling every 1					•		ſ
High Range Noble Gas	(1)	1, 2, 3, & 4	N/A	10 ⁻¹	$-10^{5} \mathrm{uCi/cc}^{(2)}$	35	ł
Pri: (RM-1VS-109 Ch 9)		_,_,_,					ľ
1st PMM: (RM-1VS-111 SA-9) 2nd PMM: (RM-1VS-101B, or 10)	ባ ርክ ናነ						Γ
3rd PMM: Grab Sampling every 1		•					
c. Gaseous Waste/Process Vent Sys	stem (PV-1/2	2)	•				
Mid Range Noble Gas	(1)	1, 2, 3, & 4	N/A	10 ⁻³	-10 ³ uCi/cc ⁽³⁾	35	ł
Prix. (RM-1GW-109 Ch 7) 1st PMM: (RM-1GW-110 SA-10)							ł
2nd PMM: (RM-IGW-108A-10) 2nd PMM: (RM-IGW-108B, or 10)							ľ
3rd PMM: Grab Sampling every 1					,		
High Range Noble Gas	(1)	1, 2, 3, & 4	<u><</u> 1.83E ⁵ c	pm 10 ⁻¹	$-10^{5} \text{ uCi/cc}^{(3)}$	35	ł
Pri: (RM-1GW-109 Ch 9) 1st PMM: (RM-1GW-110 SA-9)							Ŷ
2nd PMM: (RM-1GW-108B, or 1	-						
3rd PMM: Grab Sampling every	12 hours						ļ
(a) Instruments or actions shown as P.	MM are the	preplanned metho	ods to be used w	hen the prima	ry instrument is		`~1
inoperable, SINCE the PMM inst	ruments show	wn are not consid	lered comparable	e alternate mo	nitoring channe	ls, <u>THEN</u>	
the ODCM Surveillance Requirem would still apply when inoperabili	ients do not :	apply to the PMN	1. Increiore, the	= reporting re	quirement of AC	.000 220	1

•

•

:

;

┙╌┨┈╸

Beaver Valley	Powe	r Station		Procedure Nu)
Title:				Uait:	1/2-ODC-3.03 Level Of Use:)
				1/2	General Skill	Refe
ODCM: Controls for RETS and RI	EMP Prog	grams		Revision:	Page Number: 17 of	77
		ITACHMENT	D			
		Page 3 of 8			TATION	
ODCM CONTROLS:				RUMEN	IATION	
		BLE 3.3-6 (Cont				
· •		MONITORING				
Pri = Primary Instru		PMM = Prepl	anned Metho		-	
	INIMUM IANNELS	APPLICABLE			NOMINAL ASUREMENT	
•	PERABLE	MODES	SETPOINT		RANGE	<u>AC</u>
2. Noble Gas Effluent Steam Monitor						
a. Atmospheric Steam Dump Valve		-	U			•
Pri: (RM-1MS-100A) PMM: (Form 1/2-HPP-4.02.009.F01	(1))	1, 2, 3, & 4	<u><</u> 50 cpm	1	0 ⁻¹ -10 ³ uCi/cc	• .
Pri: (RM-1MS-100B) PMM: (Form 1/2-HPP-4.02.009.F01	(1))	1, 2, 3, & 4	<u><</u> 50 cpm	1	0 ⁻¹ -10 ³ uCi/cc	
Pri: (RM-1MS-100C) PMM: (Form 1/2-HPP-4.02.009.F01	(1)	1, 2, 3, & 4	<u><</u> 50 cpm	1	0 ⁻¹ -10 ³ uCi/cc	· •
b.Auxiliary Feedwater Pump Turbir	•		•			
Pri: (RM-1MS-101)	(1)	1, 2, 3, & 4	_ <u>≤</u> 650 cpm	i ji	0 ⁻¹ -10 ³ uCi/cc	-
PMM: (Form 1/2-HPP-4.02.009.F01	.)	·		1 A.		
				• •	5 A 19	
					•	
(a) Instruments or actions shown as PMI <u>SINCE</u> the PMM instruments shown Surveillance Requirements do not ap apply when inoperability of the prim	are not comply to the l	nsidered comparab PMM. Therefore, lent exceeds 30 da	le alternate mo the reporting re ys.	nitoring cha quirement o	nnels, THEN the	ODC
				· .		•
· **						
k						
					_	
					-	
					-	

Beaver Va	lley Powe	r Station	· · ·	Procedure Nu	^{mber:} 1/2-ODC-3.03	
inte: DDCM: Controls for RETS	and REMP Prop	grams		Unit: 1/2 Revision: 3	Level Of Use: General Skill Page Number: 18 of	Reference
ODCM CONTI	•	TTACHMENT Page 4 of 8 TION MONITC		RUMEN		
	TAI	BLE 3.3-6 (Cont	inued)			
<u>BV-2</u>	RADIATION N	MONITORING	INSTRUM	ENTATIO	N	
Pri = Primar	y Instruments,	PMM = Prepla	anned Metho	od of Mon	itoring ^(a)	
INSTRUMENT	MINIMUM CHANNELS <u>OPERABLE</u>	APPLICABLE MODES	<u>SETPOINT</u>	ME	NOMINAL ASUREMENT <u>RANGE</u>	ACTION
1. Noble Gas Effluent Monitors		Floreda J Dologov				
a. SLCRS Filtered Pathway (<u>Midrange Noble Gas (Xe-1</u> Pri: (2HVS-RQ109C) 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling e	33) (1)	1, 2, 3, & 4	N.A.	10) ⁴ -10 ² μCi/cc	35
High Range Noble Gas (Xe Pri: (2HVS-RQ109D) 1st PMM: (2HVS-RQ109C) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling e	(1)	1, 2, 3, & 4	N.A.	10) ⁻¹ -10 ^s μCi/ce	35
 (a) Instruments or actions shown <u>SINCE</u> the PMM instrument Surveillance Requirements d apply when inoperability of the 	s shown are not co to not apply to the l	nsidered comparable PMM. Therefore, 1	e alternate mo he reporting re	nitoring cha	nnels, <u>THEN</u> the	ODCM
• * *				·		
					-	

•

ł

Title:	u i l	er Valle	y Power	Station 🗉		Procedure Nu	1/2-ODC-3.0	3
		· ·				Unit:	Level Of Use:	
ODCM: Cont	rals for	DETS and	DEMD Droger		· .	1/2 Revision:	General Skill	I Reference
ODCM: Conti					· · ·	3	19.01	77
) c	DCM (CONTROI	****	ACHMENT I Page 5 of 8 ON MONITO		TRUMEN	TATION	• •
			TABL	<u>E 3.3-6 (Conti</u>	nued)			
······································		· · ·	TAB	LE NOTATIO	NS	• . [*]	, `	1 1 1
(I) Above	e backg	round	۰,	•	÷			-
	-		and Ch Q Th	e Alarm in set	on Ch 7	· . //	· •.	•
								•
	-			e Alarm in set		• •	•	
⁽⁴⁾ Other	SPING	-4 channel	s are not appli	cable to this O	DCM Con	ntrol.	•••••••	;
						• • •		
	•		<u>ACTIC</u>	<u>ON STATEME</u>	<u>NTS</u>	. ·		
		paramete	er(s), and			••		
 	b)	Annual I	Radioactive Ef	OPERABLE st fluent Release	,		-	
.:	b)	Annual I		fluent Release anner.	Report wl	hy the inop	erability was	,
	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	
	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
•	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
· ·	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
-	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
• • •	b)	Annual I	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
	- -	Annual I corrected	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not
		Annual I corrected	Radioactive Ef	fluent Release anner.	Report wi	hy the inop	erability was	not

. . .

•

	Beaver Valley Pow	ver Stat	ion	Procedure Numb	ar 2-ODC-3.03
tle: DC	M: Controls for RETS and REMP P	- <u></u>	· · · ·	Unit: 1 1/2	Level Of Use: General Skill Reference Page Number:
				3	20 of 77
		ATTACH Page (
	ODCM CONTROLS: RAD	•	•	STRUMENTA	TION
	p	ABLE43	3 (Continued)		
	BV-1_RADIATION MONITORING			EILLANCE RE	OUIREMENTS
	Pri = Primary Instruments		f = Preplanned Me		
	INSTRUMENT	CHANNEL <u>CHECK</u>	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL <u>TEST</u>	MODES IN WHICH SURVEILLANCE <u>REQUIRED</u>
1. 1	Noble Gas Effluent Monitors - SPINGS		•		•
	n. Reactor Building/SLCRS (CV-1; Also ca			14	1 7 7 8 4
. <u>[</u>	Mid Range Noble Gas Pri: (RM-1VS-110 Ch 7) 1st PMM: (RM-1VS-112 SA-10) 2nd PMM: (RM-1VS-107B, or VS-110 Ch 3rd PMM: Grab Sampling every 12 hours		R	Μ	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, or VS-110 Cl 3rd PMM: Grab Sampling every 12 hours		R	М	1, 2, 3, & 4
b.	Auxiliary Building Ventilation System (•	:
•	Mid Range Noble Gas Pri: (RM-1VS-109 Ch 7) 1st PMM: (RM-1VS-111 SA-10) 2nd PMM: (RM-1VS-101B, or VS-109 Cl 3rd PMM: Grab Sampling every 12 hours	•	R	М	1, 2, 3, & 4
	High Range Noble Gas Pri: (RM-1VS-109 Ch 9) 1st PMM: (RM-1VS-111 SA-9) 2nd PMM: (RM-1VS-101B, or VS-109 Cl 3rd PMM: Grab Sampling every 12 hours	S h 5)	R	М	1, 2, 3, & 4
С,	Gaseous Waste Process Vent System (P <u>Mid Range Noble Gas</u> Pri: (RM-1GW-109 Ch 7) 1st PMM: (RM-1GW-110 SA-10) 2nd PMM: (RM-1GW-108B, or GW-109	S Ch 5)	R	М	1, 2, 3, & 4
	3rd PMM: Grab Sampling every 12 hours		D	14	17704
	High Range Noble Gas Pri: RM-1GW-109 Ch 9) 1st PMM: (RM-1GW-110 SA-9) 2nd PMM: (RM-1GW-108B, or GW-109 3rd PMM: Grab Sampling every 12 hours		R	М	1, 2, 3, & 4

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.

					······
	Beaver Valley Po	ower Stat	ion	Procedure Nun 1	nber: /2-ODC-3.03
Title:		<u> </u>		Unit:	Level Of Use: General Skill Reference
ODC	M: Controls for RETS and REM	P Programs	e je večena po	1/2 Revision:	Page Number:
		ATTACH	MENT D	3	<u>21 of 77</u>
		: Page '	7 of 8		
	ODCM CONTROLS: RA	ADIATION M	IONITORING IN:	STRUMENT	TATION
		TABLE 4.3	3 (Continued)		, ,
B	V-1 RADIATION MONITORING	<u>G INSTRUM</u>	ENTATION SURV	VEILLANCE	E REQUIREMENTS
	Pri = Primary Instrume	ents, PMM	= Preplanned Met	hod of Moni	toring ⁽²⁾
					MODES IN WHICH
andre i s an	INSTRUMENT	CHANNEL <u>CHECK</u>	CHANNEL CALIBRATION	FUNCTIONA TEST	L SURVEILLANCE <u>REQUIRED</u>
2.No	ble Gas Effluent Steam Monitors			3 3	1 7
a.	Atmospheric Steam Dump Valve and	d Code Safety F			1, 2, 3, & 4
	Pri: (RM-1MS-100A) PMM: (Form 1/2-HPP-4.02.009.F01)		R Na Chi	M	1, 2, 3, & 4
	Pri: (RM-1MS-100B) PMM: (Form 1/2-HPP-4.02.009.F01)	S	R	Μ	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		D		
	Pri: (RM-1MS-101) PMM: (Form 1/2-HPP-4.02.009.F01)	S	R	M	1, 2, 3, & 4
_					
(a)	Instruments or actions shown as PMM inoperable. <u>SINCE</u> the PMM instrume the ODCM Surveillance Requirements would still apply when inoperability of	ents shown are n s do not apply to f the primary ins	ot considered compar- the PMM. Therefore	able alternate n , the reporting n nys.	nonitoring channels, THEN
		in the Satur	1. a	· ·	
			· · ·	· • · ·	• • .
	· .		·		
ļ	: 40				
	•				,
					:
					:
ļ					
					. .

Beaver Valle	y Power Sta	tion	Procedure Numl	er: 2-ODC-3.03
DDCM: Controls for RETS and 1	REMP Programs		Unit: 1/2 Revision:	Level Of Use: General Skill Reference Page Number: 22 of 77
	ATTACI	HMENT D		<u>22 of //</u>
	U	8 of 8		
ODCM CONTROL	S: RADIATION	MONITORING IN	ISTRUMENT	ATION
	TABLE	E 4.3-3 (Continued)	
BV-2 RADIATION MONITO	RING INSTRUM	ENTATION SUR	VEILLANCE	<u>REQUIREMENTS</u>
Pri = Primary Ins	truments, PMN	1 = Preplanned Me	thod of Monit	oring ^(a)
INSTRUMENT	CHANNEL <u>CHECK</u>	CHANNEL <u>CALIBRATION</u>	CHANNEL FUNCTIONAI <u>TEST</u>	MODES IN WHICH SURVEILLANCE REQUIRED
l. Noble Gas Effluent Monitors			ι ·	
a. SLCRS Unfiltered Pathway (C	CV-2; Also called Ele	evated Release)		
Mid Range Noble Gas Pri: (2HVS-RQ109C) 1st PMM: (2HVS-RQ109D) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling ever	S y 12 hours	R	M .	1, 2, 3, & 4
High Range Noble Gas Pri: (2HVS-RQ109D) 1st PMM: (2HVS-RQ109C) 2nd PMM: (2HVS-RQ109B) 3rd PMM: Grab Sampling ever	S y 12 hours	R	M	1, 2, 3, & 4
		. •		
	• •			
(a) Instruments or actions shown as inoperable. <u>SINCE</u> the PMM in the ODCM Surveillance Require would still apply when inoperab	struments shown are ements do not apply to	not considered compa o the PMM. Therefor	rable alternate me e, the reporting re	onitoring channels, THEN
T 140				
· ·				

•-

•

1

. ;

. ...

.]	Beaver Valley Power	Station	Procedure Nur 1	nber: /2-ODC-3.03
Title:			Unit:	Level Of Use:
ODCM: Con	rols for RETS and REMP Progra	ams consideration of the	1/2 Revision:	General Skill Reference Page Number:
			3	23 of 77
		FACHMENT E		:
O	OCM CONTROLS: RETS INST	Page 1 of 10 RUMENTATION FOR L	IOUID EF	FLUENTS
CONTROLS	: RADIOACTIVE LIQUID EFF	LUENT MONITORING	INSTRUM	ENTATION
3.3.3.9	In accordance with BV-1 and I radioactive liquid effluent mor 3.3.3.9, Table 3.3-12 shall be (that the limits of ODCM CON of the radiation monitoring cha 2.01.	itoring instrumentation cl DPERABLE with their ala TROL 3.11.1.1 are not ex	nannels sho rm/trip set ceeded. T	own in ODCM Control points set to ensure he alarm/trip setpoints
Applicability	. During releases through the flo	w nath		
		, puill		ŝ
Action:	,		•	
b. With take (alarm unsuc inope	active liquid effluents monitored one or more radioactive liquid e the ACTION shown in ODCM C a setpoint. Exert a best effort to a ccessful, explain in the next Anni- crability was not corrected in a time	ffluent monitoring instrum ontrol 3.3.3.9, Table 3.3- return the channel to opera ual Radioactive Effluent H nely manner.	nentation c 12 or conse able status Release Re	hannels inoperable, ervatively reduce the within 30 days, and if
c. The p	provisions of ODCM CONTROL	. 3.0.3 are not applicable.	•	·, `, .
SURVEILL	ANCE REQUIREMENTS	ter (·/··/	
4.3.3.9 *-	Each radioactive liquid effluen demonstrated operable by perf CHANNEL CALIBRATION, frequencies shown in ODCM	ormance of the CHANNE and CHANNEL FUNCT	EL CHECK IONAL TE	C, SOURCE CHECK, EST operations at the
+ x.	· .	· · ·	. •	
			`.	
1			14 I I I I I I I I I I I I I I I I I I I	
· · ·		4	· · · ·	
:	. •			

.

Beaver Valley Power Station	Procedure Nu	mber. 1/2-ODC-3.03
lītle:	Unit:	Level Of Use:
ODCM: Controls for RETS and REMP Programs	1/2 Revision:	General Skill Refere Page Number:
ATTACHMENI		24 of 77
Page 2 of 10		
ODCM CONTROLS: RETS INSTRUMENTA	TION FOR LIQUID EF	FLUENTS
<u>TABLE33-1</u> 2	2	
BV-1 RADIOACTIVE LIQUID EFFLUENT MO		MENTATION
Pri = Primary Instruments, Alt =		
	MINIMUM	
	CHANNELS	
INSTRUMENT	OPERABLE	ACTION
1. Gross Activity Monitors Providing Automatic Tern	nination 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 Terminatio	n 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	(1)	25
Alt: (FT-1CW-101) and (2CWS-FT101)		
4. Tank Level Indicating Devices (for tanks outside p	lant 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 Station	Procedure Nu	mber: 1/2-ODC-3.03
îtle:	Unit:	Level Of Use:
DDCM: Controls for RETS and REMP Programs	1/2 Revision:	General Skill Referent
	3	25 of 77
ATTACHMENT E Page 3 of 10 ODCM CONTROLS: RETS INSTRUMENTATION FOR	LIQUID EF	FLUENTS
TABLE 3.3-12 (continued)		:
BV-2 RADIOACTIVE LIQUID EFFLUENT MONITORIN	<u>G INSTRUN</u>	IENTATION
Pri = Primary Instruments, Alt = Alternate In	nstruments	
· · · · · · · · · · · · · · · · · · ·	IINIMUM	
C	HANNELS	•
INSTRUMENT	PERABLE	<u>ACTION</u>
1. Gross Radioactivity Monitor Providing Alarm And Automati		ion Of Release
a. Liquid Waste Process Effluent Monitor Pri: (2SGC-RQ100)	(1)	23
2. Gross Radioactivity Monitors Providing Alarm But Not Prov		ination Of Release
a. None Required	• • • • • •	•
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Pri: (2SGC-FS100)	(1)	25
b. Cooling Tower Blowdown Line Pri: (FT-1CW-101-1) or	· · · · (1)	25
Alt: (FT-1CW-101) and (2CWS-FT101)	· • • •	· ·
4. Tank Level Indicating Devices (for tanks outside plant buildi	ngs)	
a. None Required		
- **		:
		;
		:
a several and an		

)

•

مرسو

•

tic:		er Valley Power Station	Unit:	1/2-ODC-3.03
• .		•	1/2	General Skill Reference
DCM: Con	trols for	r RETS and REMP Programs	Revision:	Page Number: 26 of 77
		ATTACHMENT E	· · · · · · · · · · · · · · · · · · ·	
		Page 4 of 10		
OI	DCM C	ONTROLS: RETS INSTRUMENTATION FO	OR LIQUID EI	FFLUENTS
		TABLE 3.3-12 (continued)		
		ACTION STATEMENTS		
Action 23	OPE	the number of channels OPERABLE less than RABLE requirement, effluent releases may be to release:		
_ ÷	1.	At least two independent samples are analyzed SURVEILLANCE REQUIREMENT 4.11.1 qualified members of the Facility Staff inde calculations ⁽¹⁾ and discharge valving, or	.1.1, and at lea	st two technically
-t. · ·	2.	Initiate monitoring with the comparable alter Surveillance requirements applicable to the comparable alternate monitoring channel with CONTROL requirement.	inoperable cha	nnel shall apply to the
	Othe	rwise, suspend release of radioactive effluents	via this pathw	ay.
Action 24		the number of channels OPERABLE less that RABLE requirement, effluent releases via this		
	1. •	That at least once per 12 hours grab sample (beta or gamma) at a Lower Limit of Detect	• •	
	2.	Initiate monitoring with the comparable alto Surveillance requirements applicable to the comparable alternate monitoring channel w CONTROL requirement.	inoperable cha	nnel shall apply to the
				:

"reviewer" satisfy the requirement for "...two technically qualified members of the Facility Staff independently verify the release rate calculations..."

. .

و میت رمیشو د

.

L.L.

Beaver Valley Power Station			Beaver Valley Power Station 1/2-ODC-3.03			-3.03			
Title:					Unit:	12.	Level Of L		
ODCM: Cont	rols for RET	'S and REMP I	Programs		Revisi		Page Num		
			ATTACHMEN	זרידים.	· · ·	3	12	<u>27 of 77</u>	
			Page 5 of 1						
. OD	CM CONTR	ROLS: RETS	INSTRUMENT		OR LIQUI	D EF	FLUENT	ſS	
			Table 3.3-12 (co	ontinued)					
	•• 、		ACTION STATI	<u>EMENTS</u>	· · ·				
Action 25			nels OPERABLI t, effluent release						
	1 · · ·		stimated at least ed to estimate flo	-	4 hours du	ring a	ctual rele	eases. (P	'u
· · · · ·	Sur con	rveillance requ	g with the comp irements applica ate monitoring c rement.	able to the i	inoperable	e chan	nel shall	l apply to	
		-		F 1	• •	1 41			_
Action 26			nels OPERABL		-	-			nI
			.,		····· . · · · · · · · · · · · · · · · ·		··· .		
	1. The	e tank liquid le	evel is estimated	during all	liquid add	litions	to the ta	ank, or	
· • • ·	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ig channe inel shall	el. ODC l apply to	
• • • •	2. Init Sur con	tiate monitorin rveillance requ	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ig channe inel shall	el. ODC l apply to	
e et al second	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ig channe inel shall	el. ODC l apply to	
 	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ig channe inel shall	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	barable alterable to the	ernate mor inoperabl	nitorin e char	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl	nitorin e char	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
τ. 	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	
	2. Init Sur con	tiate monitorin rveillance requ mparable alterr	g with the comp irements applica nate monitoring o	parable alte able to the channel wh	ernate mor inoperabl hen used t	nitorin e char o satis	ng channe nnel shall sfy this C	el. ODC l apply to DDCM	

Ĵ

Ċ

Beaver Valley Powe	er Station	• • • • •	Procedure Number:	
		; .		<u>C-3.03</u>
				Of Use: eral Skill Reference
DCM: Controls for RETS and REMP Pr	ograms	· · · · · ·		Number:
· · · · · · · · · · · · · · · · · · ·			3	<u>28 of 77</u>
	ATTACHMEN			
ODCM CONTROLS: RETS IN	Page 6 of 10 ISTRUMENTA		IQUID EFFLUE	INTS
	TABLE 4.3-	12		
<u>BV-1 RADIOACTIV</u> INSTRUMENTATIO				
Pri = Primary Inst	ruments, Alt	= Alternate In	struments	,
INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL <u>TEST</u>
1. Gross Beta or Gamma Radioactivity Monitor	rs Providing Alar	m And Automat	ic Termination Of	Release
a. Liquid Radwaste Effluent Line Pri: (RM-1LW-104)	D	P ⁽³⁾	R ⁽³⁾	Q ⁽¹⁾
 b. 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⁾
2. Gross Beta Or Gamma Radioactivity Monito Release	ors Providing Ala	m But Not Prov	iding Automatic T	Fermination Of
a. Component Cooling - Recirculation Spray Heat Exchangers River Water Monitor Pri: (RM-1RW-100)	D	. M ⁽⁵⁾	R ⁽³⁾	Q ⁽²⁾
3. Flow Rate Monitors				
a. 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-FT101)	D ⁽⁴⁾ ,	NA	R	Q

er Station	· · · ·	Unit:	/2-OD		
			i Level ()!	Use:	
		1/2		al Skill I	Referend
rograms		Revision:	Page Nu		
		3	· .	<u>29 of '</u>	77
		· • · ·	-		· ··· · ·
ISTRUMENTA	TION FOR I	IQUID EFI	FLUEN	ITS	
RI F 4 3-12 (co	ntinued)				
<u>DIAS 110 12 (00</u>	lindouj				į
/E LIQUID EFI	ILUENT MO	NITORING	į		
ON SURVEILL	ANCE REQU	TREMENT:	<u>5</u>		
	· · ·				:
uments, Alt	= Alternate In	struments			1
					NNEL
CHANNEL	SOURCE				
<u>CHECK</u>	<u>CHECK</u>	<u>CALIBRA</u>	TION	TI	<u>EST</u>
utside plant build	ings)				
D*	NA	. R			Q
•		· ·		•	
D*	NA	R			Q
D*	NA	···· R	•	z_{A}	Q :
4.5		• •	·	•	
D*	NA	Ŕ			Q
		• •			1
				•	
		,			•
_					
•					
			•••		:
					. 1
		•			
					:
					÷
		•			
		•			•:
	· .	· .			
			-		
	Page 7 of 10 NSTRUMENTA BLE 4.3-12 (con /E LIQUID EFF ON SURVEILLA uments, Alt = CHANNEL <u>CHECK</u> utside plant build D* D* D*	BLE 4.3-12 (continued) <u>/E LIQUID EFFLUENT MO</u> <u>ON SURVEILLANCE REQU</u> uments, Alt = Alternate In <u>CHANNEL SOURCE</u> <u>CHECK CHECK</u> utside plant buildings) D* NA D* NA	Page 7 of 10NSTRUMENTATION FOR LIQUID EFFBLE 4.3-12 (continued)VE LIQUID EFFLUENT MONITORING ON SURVEILLANCE REQUIREMENTSUments, Alt = Alternate InstrumentsUments, Alt = Alternate InstrumentsCHANNEL CHECKCHANNEL CHECKCHANNEL CHECKD*D*NAD*NARD*NARD*NAR	Page 7 of 10 NSTRUMENTATION FOR LIQUID EFFLUEN <u>BLE 4.3-12 (continued)</u> <u>VE LIQUID EFFLUENT MONITORING</u> <u>ON SURVEILLANCE REQUIREMENTS</u> uments, Alt = Alternate Instruments <u>CHANNEL SOURCE CHANNEL</u> <u>CHECK CHECK CALIBRATION</u> utside plant buildings) D* NA R D* NA R D* NA R	ATTACHMENT E Page 7 of 10 ISTRUMENTATION FOR LIQUID EFFLUENTS BLE 4.3-12 (continued) /E LIQUID EFFLUENT MONITORING ON SURVEILLANCE REQUIREMENTS ruments, Alt = Alternate Instruments CHANNEL SOURCE CHANNEL FUNCT CHECK CHECK CALIBRATION THE utside plant buildings) D* NA R D* NA R D* NA R

الم الم الم الم الم الم الم الم

1

Beaver Valley Pov	ver Station		Procedure Numb	× 2-ODC-3.03
				Level Of Use:
··· • · · · · ·				General Skill Reference
DCM: Controls for RETS and REMP	Programs		Revision: 3	Page Number: 30 of 77
	ATTACHMENT	ГЕ	·	
•	Page 8 of 10			
ODCM CONTROLS: RETS	INSTRUMENTA	TION FOR L	IQUID EFF	LUENTS
<u>]</u>	TABLE 4.3-12 (co	ntinued)		
BV-2 RADIOAC INSTRUMENTA				
Pri = Primary In	struments, Alt	= Alternate In	struments	
<u>INSTRUMENT</u>	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHANN <u>CALIBRA</u>	
1. Gross Radioactivity Monitor Providing Al	arm And Automatic	Termination O	f Release	·
a. Liquid Waste Process Effluent Pri: (2SGC-RQ100)	D	P(3)	R ⁽⁸⁾⁽³⁾) Q ^m
2. Flow Rate Measurement Devices				
a. Liquid Radwaste Effluent Pri: (2SGC-FS100)	D ⁽⁴⁾	NA	R	Q
 b. Cooling Tower Blowdown Line Pri: (FT-1CW-101-1) or Alt: (FT-1CW-101) and (2CWS-FT101) 	D ⁽⁴⁾	NA	R	Q
3. Tank Level Indicating Devices (for tanks of		gs)		
a. None Required				
*				
	•	. *	•*. •*	
- +s-				
				•
				:

••

· · · · ·

	E	Beaver Valley Power Station		Procedure No	umber: 1/2-ODC-3.03
Title:	. 1			Unit: 1/2	Level Of Use: General Skill Referer
ODCM:	: Contr	ols for RETS and REMP Programs	· · · · · · · · · · · · · · · · · · ·	Revision:	Page Number: 31 of 77
		ATTACHMENT	E		
	OD	Page 9 of 10 CM CONTROLS: RETS INSTRUMENTAT	ION FOR I	JQUID EI	FFLUENTS
		TABLE 4.3-12 (cont	inued)		
		TABLE NOTATI	ON		
(I) ;		HANNEL FUNCTIONAL TEST shall also de ay and Control Room Alarm Annunciation oc			
	1.	Instrument indicates measured levels above	he alarm/tr	ip setpoin	t.
	2.	Downscale failure.		· ,	
	3.	Instrument controls not set in operate mode.	. .		••••
(2)		HANNEL FUNCTIONAL TEST shall also de nciation occurs if any of the following condition	ons exist:	· .	ol Room Alarm
	. 1.	Instrument indicates measured levels above		ip setpoin	t de l'Étres de la transforme de la tran
· · · ·	2.	Downscale failure.			
• •	3.	Instrument controls are not set in operate mo	ode.	*. •• . * .	
(3)	perfor (Stand mease system CALI interv outage	itial CHANNEL CALIBRATION for radioac med using one or more of the reference stands lards/NIST) or using standards that have been rement assurance activities with NBS/NIST. In over its intended range of energy and rate ca BRATION, sources that have been related to t als of at least once per 18 months. This can n es. (Existing plants may substitute previously ement).	ards certifie obtained fr These stand pabilities. he initial ca ormally be	d by the N om suppli dards shou For subsect alibration s accomplis	lational Bureau of ers that participate in ild permit calibrating quent CHANNEL should be used, at hed during refueling
(4)	CHAI	NNEL CHECK shall consist of verifying indic NNEL CHECK shall be made at least once da ch releases are made.		v .	
	A SO	URCE CHECK may be performed utilizing the	e installed in the exis		flashing the detector

		Beaver Valley Power Station	Procedure N	
le:			Unit:	1/2-ODC-3.03
	· · .		1/2	General Skill Reference
DCM	f: Con	trols for RETS and REMP Programs	Revision:	Page Number:
		· · · · · · · · · · · · · · · · · · ·	3	32 of 77
	OI	ATTACHMENT E Page 10 of 10 DCM CONTROLS: RETS INSTRUMENTATION	I FOR LIQUID E	FFLUENTS
		TABLE 4.3-12 (continue	ed)	
		TABLE NOTATION	[
6)	pathy	CHANNEL FUNCTIONAL TEST shall also demo way and Control Room Alarm Annunciation occurs s above the Alarm/Trip Setpoint.		
		CHANNEL FUNCTIONAL TEST shall also demo rs if any of the following conditions exists:	nstrate that Conti	ol Alarm Annunciation
	1.	Downscale failure.		
	2.	Instrument controls are not set in operate mode.		
ന	path	CHANNEL FUNCTIONAL TEST shall also demo way and Control Room Alarm Annunciation occurs s above the alarm/trip setpoint.		
⁽⁸⁾ .		CHANNEL CALIBRATION shall also demonstrat rs if either of the following conditions exist:	e that Control Ro	oom Alarm Annunciatior
·	1.	Downscale failure.		
	2.	Instrument controls are not set in operate mode.		
		• • •	•	
. : ,		•		
•		• • • • •		
	· 7	• • • • •		
	- 1 -5-	· · · ·		
	- 1 6-17	· · · ·		

.

	· · · · · · · · · · · · · · · · · · ·		<u> </u>	Procedure Nu	mhar
2 1 -	Beaver Vall	ley Power Station	•		1/2-ODC-3.03
Title:				Unit:	Level Of Use:
			.	1/2 Revision:	General Skill Reference Page Number:
ODCM: Co	ntrols for RETS an	d REMP Programs		3	33 of 77
		ATTACHMENT F			
		Page 1 of 1			
	ODCM CONTRO	OLS: RETS INSTRUMENT FOR	R GASI	EOUS REI	EASES
	· ,		•		•
CONTROL	S: RADIOACTIV	E GASEOUS EFFLUENT MONI	TORIN	IG INSTR	UMENTATION
	· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·
2 2 2 10		the DV 1 and DV 0 Track-ind Cra	-:6:	on 6 9 6o 1	terre 1 the redicestive
3.3.3.10		th BV-1 and BV-2 Technical Spectronic Spectronic Instrumentation channels and the spectro spec			
		Il be operable with their alarm/trip			
	ODCM CONTR	OL 3.11.2.1 are not exceeded. Th	e alarn	/trip setpo	ints of the radiation
	monitoring chan	nels shall be determined in accord	ance w	ith 1/2-OD	C-2.02.
		·			
<u>Applicabili</u>	ty: During release	s through the flow path.			
Action:	• • • • •		. , ,		
<u>Metton</u> .			•	· .	
a. With	a radioactive gased	ous process or effluent monitoring	instru	mentation of	channel alarm/trip
		e than a value which will ensure t			
		liately suspend the release of radio	active	gaseous ef	fluents monitored by
the af	fected channel or o	correct the alarm/trip setpoint.		•	
b. With	one or more radio	active gaseous effluent monitoring	instru	mentation	channels inoperable.
		n in ODCM Control 3.3.3.10, Tab			
		best effort to return the channel to			
		the next Annual Radioactive Effl	uent R	elease Rep	ort why the
inope	rability was not co	prrected in a timely manner.	• • •		
a The	rrouisions of OD	CM CONTROL 3.0.3 are not appl	licabla		
				на 1 стания. "М	
SURVEILI	LANCE REQUIRE	EMENTS	· ·		
			· .		
			• _	•	
4.3.3.10		e gaseous effluent monitoring inst			
÷		perable by performance of the CHA LIBRATION, and CHANNEL FU			
•		wn in ODCM Control 3.3.3.10, Ta			of operations at the
					·····
	•				
				•	· · · · · · ·
			•	••••	•
1		11 s. <u>- 1</u> 2 station (* 17. j 17. j.	۰.:	and the second	•
					-
					•

.

. .

- .

Beaver Valley Power Station	ì	Procedure Num	
Tide:		1/	2-ODC-3.03 Level Of Use:
		1/2	General Skill Reference
ODCM: Controls for RETS and REMP Programs		Revision: 3	Page Number: 34 of 77
ATTACHMENI	F		
Page 2 of 2			
ODCM CONTROLS: RETS INSTRUMENT		SOUS RELI	2ASES
<u>TABLE 3.3-13</u>			
BV-1 RADIOACTIVE GASEOUS EFFLUENT MO			TATION
Pri = Primary Instruments, Alt = A		nents	
	NIMUM ANNELS		
	ERABLE	APPLICABIL	<u>ITY</u> <u>ACTION</u>
1. Gaseous Waste/Process Vent System (PV-1,2)			•
a. Noble Gas Activity Monitor Pri: (RM-1GW-108B) or	(1)	• •.	27,29,30A,30B
Alt For Continuous Release: (RM-1GW-109 Ch 5) This cha monitoring channel for continuous releases via this pathway. Alt For Batch Releases: (See Action 27) RM-1GW-109 Ch 5 monitoring channel for batch releases of the BV-1 GWDT's or	SHALL NOT the BV-2 GWS	be used as the T's. Specifica	comparable alternate Illy, <u>SINCE</u> this channel
does not perform the same automatic isolation function as the p for batch releases of the BV-1 GWDT's or the BV-2 GWST's v	ia this pathway		
b. Particulate and Iodine Sampler	(1)	*	32
Pri: (Filter Paper & Charcoal Cartridge for RM-1GW-109) or 1st Alt: (Filter Paper & Charcoal Cartridge for RM-1GW-110) 2nd Alt: (Continuous collection via RASP Pump) or 3rd Alt: (Grab samples every 12 hours)	or		
c. System Effluent Flow Rate Measuring Device Pri: (FR-1GW-108) or Alt: (RM-1GW-109 Ch 10)	(1)	. *	28A
d. Sampler Flow Rate Measuring Device Used for	(1)	*	28B
Sample Collection Pri: (RM-1GW-109 Ch 15) or Alt: (Rotometer: FM-1GW-101, and Vacuum Gauge: PI-1GW-	.13)		
2. Auxiliary Building Ventilation System (VV-1; Also called Ven	•		
a. Noble Gas Activity Monitor Pri: (RM-1VS-101B) or Alt: (RM-1VS-109 Ch 5)	(1)	*	29,30A
b. Particulate and Iodine Sampler	(1)	*	32
Pri: (Filter Paper & Charcoal Cartridge for RM-1VS-109) or 1st Alt: (Filter Paper & Charcoal Cartridge for RM-1VS-111) of 2nd Alt: (Continuous collection via RASP Pump) or 3rd Alt: (Grab samples every 12 hours)	or		• •
c. System Effluent Flow Rate Measuring Device Pri: (FR-1VS-101) or Alt: (RM-1VS-109 Ch 10)	(1)	*	28A
 d. Sampler Flow Rate Measuring Device Used for Sample Collection Pri: (RM-1VS-109 Ch 15) or Alt: (Rotometer: FM-1VS-102, and Vacuum Gauge: PI-1VS-6 	(1) 59)	*	28B
*During Releases via this pathway.			- . '

	Beaver Valley	Power Stati	0n	Procedure Nu	-	
			· · ·	Unit:	1/2-ODC-3.03 Level Of Use:	
itle:				1/2	General Skill Refe	rence
DDCN	M: Controls for RETS and R	EMP Programs	· · · · · · · · ·	Revision:	Page Number:	· · ·
-	· · · · · · · · · · · · · · · · · · ·	ATTACH	MENT F		<u>35 of 77</u>	· · ·
		Page 3			•	;
	ODCM CONTROL			ASEOUS REI	EASES	•
			12 (continued)			
		•	13 (continued)			•
	BV-1 RADIOACTIVE G	ASEOUS EFFLUI	ENT MONITO	<u>KING INSTRU</u>	UMENTATION	÷
	Pri = Prin	nary Instruments,	Alt = Alterna	te Instruments		•
		and the second	MINIMUM			·
· . `			CHANNELS			NT.
3.Rea		lso called Elevated R	OPERABLE elease)	APPLICAB	<u>ACTIO</u>	<u>nn</u> :
	Noble Gas Activity Monitor		(1)	*.	29 ,3 0A	r :
· · ·	Pri: (RM-1VS-107B) or Alt: (RM-1VS-110 Ch 5)	· -•• • · · · · · · · · · · · · · · · ·	· ·			i
b.	Particulate and Iodine Sampler	· ·	(1)	*	32	
	Pri: (Filter Paper & Charcoal Car			•		
	1st Alt: (Filter Paper & Charcoal	Cartridge for RM-1VS				
(2nd Alt: (Continuous collection v 3rd Alt: (Grab samples every 12)				•	•
c.	System Effluent Flow Rate Me		(1)	*	28A	•
	Pri: (FR-1VS-112) or	asuring Device	(1)			i
	Alt: (RM-1VS-110 Ch 10)	· •		•		
đ.	Sampler Flow Rate Measuring		(1)	*. ·.	28B	:
	Device Used for Sample Collect Pri: (RM-1VS-110 Ch 15) or	tion		• •	-	. • 1
	Alt: (Rotometer: FM-1VS-103, a	nd Vacuum Gauge: PI	-1VS-660)	, *** * *		:
:					a terrar a second	• •
	•					1
			: :	**** ** **: ***		1
*Dùr	ing Releases via this pathway.	. It is particular	· ·	att and in the	- 	•
Dui	ing iteleases via tins patitway.	14				•
				ter en		•
	*	÷ ()				•
		· i		21.000 - 1. • 1		:
		att fp;-	and the state of the	•••••••••••••••••••••••••••••••••••••••	•	; ;
				• ••••••••••••••••••••••••••••••••••••		
. . .	•	·				
			at and a			
			•			•
		<i>,</i>				:
		,			.	•
				•	-	•
				•	•	1

:

.

· · · · · ·

.

,

. . .

and the second second

•

	Beaver Valley Power Station	n		Procedure Number:		
itle:			Unit:	1/2-ODC-3.03		
DCM	f: Controls for RETS and REMP Programs	· • .	<u>1/2</u> Revision:	General Skill Reference Page Number: 36 of 77		
	ATTACHMI Page 4 of ODCM CONTROLS: RETS INSTRUMI	f 4 ENT FOR GA	ASEOUS REI			
	TABLE 3.3-13					
	BV-2 RADIOACTIVE GASEOUS EFFLUEN			<u>IENTATION</u>		
	Pri = Primary Instruments,	Alt = Alternat MINIMUM	e instruments			
	INSTRUMENT	CHANNELS OPERABLE	APPLICAB	ILITY ACTION		
a.	CRS Unfiltered Pathway (VV-2; Also called Ventilation Noble Gas Activity Monitor Pri: (2HVS-RQ101B)	Vent) (1)	*	29, 30B		
b.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2HVS-RQ101) 1st Alt: (Continuous collection via RASP Pump) or 2nd Alt: (Grab samples every 12 hours)	(1) or	*	32		
	Process Flow Rate Monitor Pri: (Monitor Item 29 for 2HVS-VP101)	(1)	*	28A		
	Sampler Flow Rate Monitor Used for Sample Collectio Pri: (2HVS-FIT101)	n (l)	*.	28B		
a.	CRS Filtered Pathway (CV-2; Also called Elevated Relea Noble Gas Activity Monitor Pri: (2HVS-RQ109B)	ase) (1)	*	29, 30B		
	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2HVS-RQ109) 1st Alt: (Continuous collection via RASP Pump) or 2nd Alt: (Grab samples every 12 hours)	(1) High 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 Collectio Pri: (Monitor Items 28 and 72 for 2HVS-DAU109B)	n (1)	*	28B		
3.Dec	ontamination Building Vent (DV-2)					
	Noble Gas Activity Monitor Pfi: (2RMQ-RQ301B)	(1)	*	29		
b.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 2RMQ-RQ301 1st Alt: (Continuous collection via RASP Pump) 2nd Alt: (Grab samples every 12 hours)	(1)) or	*	32		
c.	Process Flow Rate Monitor	None	None			
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT301)	on (1)	*	28B		

*During Releases via this pathway.

Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.03
ide:	Unit:	Level Of Use:
energy and the second se	1/2	General Skill Referen
DDCM: Controls for RETS and REMP Programs	Revision:	Page Number:
ATTACHMENT F	<u></u>	<u> </u>
Page 5 of 5		
ODCM CONTROLS: RETS INSTRUMENT FOR GA	SEOUS REI	EASES
TABLE 3.3-13 (continued)		
BV-2 RADIOACTIVE GASEOUS EFFLUENT MONITOR		
Pri = Primary Instruments, Alt = Alternate	e Instruments	
MINIMUM CHANNELS		
INSTRUMENT	APPLICAB	ILITY ACTION
4. Condensate Polishing Building Vent (CB-2)		00
a. Noble Gas Activity Monitor (1) Pri: (2HVL-RQ112B)		29
b. Particulate and Iodine Sampler (1) Pri: (Filter Paper & Charcoal Cartridge for 2HVL-RQ112)	*	32
1st Alt: (Continuous collection via RASP Pump) 2nd Alt: (Grab samples every 12 hours)	1	
c. Process Flow Rate Monitor None	None	None
d. Sampler Flow Rate Monitor Used for Sample Collection (1)	*	28B
Pri: (2HVL-FIT112)		
5. Waste Gas Storage Vault Vent (WV-2)		2 2
a. Noble Gas Activity Monitor (1) Pri: (2RMQ-RQ303B)	* •	. 29
b. Particulate and Iodine Sampler (1) Pri: (Filter Paper & Charcoal Cartridge for 2RMQ-RQ303)	*	32
1st Alt: (Continuous collection via RASP Pump)		
2nd Alt: (Grab samples every 12 hours) c. Process Flow Rate Monitor None	None	None
d. Sampler Flow Rate Monitor Used for Sample Collection (1)	None	· ·
d. Sampler Flow Rate Monitor Used for Sample Collection (1) Pri: (2RMQ-FIT303)	· .	28B
		:
*During Releases via this pathway.		•
	· _	
•		
a an an tha an tha an Araba an tao an	•	;
$\sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{i$	** . *	
	•	
		-
· · · · · · · · · · · · · · · · · · ·	• • •	• • •
and the second		

]	Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.03
Title		Unit:	Level Of Use:
	a second a second for the second s	1/2	General Skill Reference
ODCM: Cont	rols for RETS and REMP Programs	Revision:	Page Number: 38 of 77
	ATTACHMENT F		
	Page 6 of 6		24.020
	ODCM CONTROLS: RETS INSTRUMENT FOR GA	ASEOUS REI	LEASES
	TABLE 3.3-13 (continued)		
	ACTION STATEMENTS		
Action 27	APPLICABLE FOR BATCH RELEASES OF BV-1	GASEOUS	VASTE DECAY
	TANKS OR BV-2 GASEOUS WASTE STORAGE	TANKS	
	With the number of channels OPERABLE less than OPERABLE requirement, the contents of the Unit 1 (GWDT's) or the Unit 2 Gaseous Waste Storage Tan environment provided that prior to initiating the rele	Gaseous Was iks (GWST's)	te Decay Tanks
	1. At least two independent samples of the tank two technically qualified members of the Fac release rate calculations and discharge valve	cility Staff ind	
	2. Initiate continuous monitoring with the comp ODCM Surveillance requirements applicable to the comparable alternate monitoring chann Control requirement.	e to the inoper	able channel shall appl
	Otherwise, suspend releases of radioactive effluents	via this pathy	/ay.
Action 28A	APPLICABLE FOR BV-1 SYSTEM EFFLUENT F DEVICES OR BV-2 PROCESS FLOWRATE MON		MEASURING
	With the number of channels OPERABLE less than OPERABLE requirement, effluent releases via this		
	1. The system/process flow rate is estimated at be at the ODCM design value ⁽¹⁾), or	least once per	4 hours (or assumed to
7 Mar	2. Initiate continuous monitoring with the composition of the comparable alternate monitoring chance control requirement.	e to the inoper	able channel shall appl
	u of estimating the system/process flow rate at least or rate can be assumed to be at the following ODCM des	•	s, the system/process
	1,450 cfm = BV-1 Gaseous Waste/Process Vent Sy 62,000 cfm = BV-1 Auxiliary Building Ventilation 49,300 cfm = BV-1 Reactor Building/SLCRS (CV- 23,700 cfm = BV-2 SLCRS Unfiltered Pathway (V 59,000 cfm = BV-2 SLCRS Filtered Pathway (CV-2	System (VV-) 1) V-2)	-

• .

E	Beaver Valley Power Station	Procedure N	umber: 1/2-ODC-3.03
l'itle:	· · · · · · · · · · · · · · · · · · ·	Uait:	Level Of Use:
		1/2 Revision:	General Skill Reference Page Number:
DDCM: Contr	rols for RETS and REMP Programs	3	39 of 77
	ATTACHMENT F		·
e (DDCM CONTROLS: RETS INSTRUMENT FOR GA	SEOUS RE	LEASES
	TABLE 3.3-13 (continued)		
	ACTION STATEMENTS		• •
Action 28B	APPLICABLE FOR BV-1 SAMPLER FLOW RATE	MEASURI	NG DEVICES OR BV
Action 20D	2 SAMPLER FLOWRATE MONITORS	MLAGORI	
	With the second se	J L 41	
	With the number of channels OPERABLE less than r OPERABLE requirement, effluent releases via this pa		
	1. The sampler flow rate is estimated at least once		-
	 Initiate continuous monitoring with the comparison 		
•	ODCM Surveillance requirements applicable	to the inope	rable channel shall app
en an	to the comparable alternate monitoring channel	el when used	l to satisfy this ODCM
• :	Control requirement. (1996)	· · ,	•
Action 29	APPLICABLE FOR CONTINUOUS RELEASES	<i>,</i> .	
$F_{i,j} = \{1, j\}$	With the number of channels OPERABLE less than r	equired by t	he Minimum Channels
	OPERABLE requirement, effluent releases via this pa	athway may	continue provided:
•	1. Grab samples (or local monitor readings) ⁽¹⁾ ar		
	grab samples are taken, these samples are to b 24 hours, or	e analyzed f	for gross activity within
		anabla altam	oto monitoring channe
an a	2. Initiate continuous monitoring with the composition ODCM Surveillance requirements applicable		
•	to the comparable alternate monitoring chann		
	CONTROL requirement.	· .	
	,		
	a series a substanting the series of the state of the series of the series of the series of the series of the s The substantian series of the series of th		
· ·	and the second second the second second second second	, <u> </u>	
	V-2, there are situations where the local monitor (e.g.;		
	tended monitoring function, but the communications a the local monitor can be read at least once per 12 hours		
least	once per 12 hours." all a statue de destructions		
. ·	and the second statement of the statement of the second second second second second second second second second	, 3	- ,
,	\mathbb{E}^{n+1} is $\mathbb{E}\left\{ \hat{\mathcal{H}}_{n}^{(n)}, \hat{\mathcal{H}}$	je svete starte star Televisione starte st	
, • .	マンサイト しょうしょう 一人 道本的 わたくしょうしゃ		•
			:.
	 Provide the second state of the s	· · ·	1.
	1、11、11、11、11、11、11、11、11、11、11、11、11、1	· · · · ·	-

		•	
I	Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-3.03
Title:	•	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Cont	rols for RETS and REMP Programs	Revision:	Page Number:
	ATTACHMENT F Page 8 of 8 ODCM CONTROLS: RETS INSTRUMENT FOR GAS	EOUS RE	LEASES
	TABLE 3.3-13 (continued)		
A	ACTION STATEMENTS		
Action 30A	APPLICABLE FOR THE INITIAL BATCH PURGE (CONTAINMENT	<u>JF THE BY</u>	V-I REACTOR
	With the number of channels <u>OPERABLE</u> less than red OPERABLE requirement, immediately suspend PURC this pathway if both RM-1VS-104A and B are not OPE system in service. The following should also be noted	GING of Re ERABLE w	actor Containment via
	1. As stated, this Action is applicable for INOPER performing the initial batch purge of the reactor immediately after reactor containment atmosph	r containme	ent atmosphere (i.e.;
· ·	2. Since all other releases of reactor containment a batch purge) are considered continuous releases applicable. Therefore, Action 29 is applicable performing a continuous release of the reactor of the	s, then this for INOPE	Action is not RABLE monitors when
Action 30B	APPLICABLE FOR THE INITIAL BATCH PURGE (CONTAINMENT	<u>OF THE BY</u>	V-2 REACTOR
	With the number of channels OPERABLE less than re OPERABLE requirement, immediately suspend PURC this pathway if both 2HVR-RQ104A and 104B are not purge/exhaust system in service. The following should	GING of Re OPERAB	eactor Containment via LE with the
· to	1. As stated, this Action is applicable for INOPER performing the initial batch purge of the reacto immediately after reactor containment atmosph	r containm	ent atmosphere (i.e.;
	2. Since all other releases of reactor containment batch purge) are considered continuous release applicable. Therefore, Action 29 is applicable performing a continuous release of the reactor	s, then this for INOPE	Action is not RABLE monitors when
Action 32	APPLICABLE FOR CONTINUOUS RELEASES		
	With the number of channels OPERABLE less than re OPERABLE requirement, effluent releases via this par samples are continuously collected with auxiliary sam ODCM Control 3.11.2.1, Table 4.11-2, or sampled and	thway may pling equip	continue provided ment as required in

•

•

Beaver Valley Powe	er Station		Procedure Num	nber: /2-ODC	-3.03
ĩtle:			Unit:	Level Of	Use:
DDCM: Controls for RETS and REMP Pr	ograms at the let	2	1/2 Revision:	Page Num	• •
· · · · · · · · · · · · · · · · · · ·	ATTACHMEN		<u> </u>		41 of 77
	Page 9 of 9				
ODCM CONTROLS: RETS	•	FOR GAS	EOUS REL	EASES	•
	TABLE 4.3-				• •
<u>BV-1 RADIOACTI</u> INSTRUMENTAT	<u>VE GASEOUS EF</u> TION SURVEILLA				
Pri = Primary I	instruments, $Alt = A$	Alternate Instru	ments		÷
	CHANNEL	SOURCE	CHAN	NEL I	CHANNEL FUNCTIONAL
INSTRUMENT	CHECK	CHECK	CALIBRA		<u>TEST</u>
1. Gaseous Waste/Process Vent System (PV-1,2)	[*]	- (4)	- A	·.	-0
a. Noble Gas Activity Monitor Pri: (RM-1GW-108B)	\mathbf{P} , \mathbf{P} , \mathbf{P} , \mathbf{P}	P ⁽⁴⁾	R ⁽³⁾	, к	Q ⁽¹⁾
Alt For Continuous Release: (RM-1GW-109	Ch 5) This channel m	ay only be used	as the compara	ble alterna	te monitoring
channel for continuous releases via this pathway	1. Ten.				
Alt For Batch Releases: (See Action 27): RM					
channel for batch releases of the BV-1 GWDT's					
same automatic isolation function as the primary		FION 27 shall be	followed for b	atch releas	es of the BV-1
GWDT's or the BV-2 GWST's via this pathway			and a set	و. ۱	·. : :
b. Particulate and Iodine Sampler	W	· NA	NA	1.000	: NA
Pri: (Filter Paper & Charcoal Cartridge for RM- 1st Alt: (Filter Paper & Charcoal Cartridge for F				··· • . ··	4
2nd Alt: (Continuous collection via RASP I			. •	$\gamma \sim \gamma \gamma$	· · ·
3rd Alt: (Grab samples every 12 hours)	-			• • •	· ·
c. System Effluent Flow Rate Measuring Device	e P	NA	R	• •	Q
Pri: (FR-1GW-108) or Alt: (RM-1GW-109 Ch 10)	,				•
d. Sampler Flow Rate Measuring Device	D*	NA	R		Q .
Used for Sample Collection	ν.	110	A A		× :
Pri: (RM-1GW-109 Ch 15) or Alt: (Rotometer: FM-1GW-101, and Vacuum G	auge: PL-1GW-12)		· · · ·		•
2. Auxiliary Building Ventilation System (VV-1; Als		Vent)			:
a. Noble Gas Activity Monitor	D	M ⁽⁴⁾ ,	R ⁽³)	Q ⁽²⁾
Pri: (RM-1VS-101B) or	-	P ⁽⁴⁾ ***			•
Alt: (RM-1VS-109 Ch 5)	·,··· <u>·</u> ···		· · · · · · · · · · · · · · · · · · ·	•	· · ·
b. Particulate and Iodine Sampler	W	NA	NA	L ·	NA .
Pri: (Filter Paper & Charcoal Cartridge for RM-	-1VS-109) or				
Ist Alt: (Filter Paper & Charcoal Cartridge for I	(M-1VS-111) Or Pump) cr				
2nd Alt: (Continuous collection via RASP) 3rd Alt: (Grab samples every 12 hours)	rump) or				
c. System Effluent Flow Rate Measurement Dev	vice D	NA	п		•
Pri: (FR-1VS-101) or	·	INV	R		Q .
Alt: (RM-1VS-109 Ch 10)	· •				
d. Sampler Flow Rate Measuring Device	D	NA	R		Q
Used for Sample Collection Pri: (RM-1VS-109 Ch 15) or					
Alt: (Rotometer: FM-1VS-102, and Vacuum G	auge: PI-1VS-659)				:
	- •				·
* During Releases via this pathway.					•
*** During purging of Reactor Containment via this pa	thway.			-	· .
			•		-

. .

.

Beaver Valley Po	ower Station		Procedure Num 1/	ber: 2-ODC-3.03
Title:			Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Controls for RETS and REMI	Programs		Revision:	Page Number: 42 of 77
ODCM CONTROLS: RI	ATTACHMEN Page 10 of 10 ETS INSTRUMEN)	OUS RELE	
	TABLE 4.3-	<u>13</u>		
	<u> TIVE GASEOUS E</u> TION SURVEILL			
Pri = Primary	Instruments, Alt =	Alternate Ins	struments	
INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHANN <u>CALIBRA</u>	
3. Reactor Building/SLCRS (CV-1; Also cal a. Noble Gas Activity Monitor Pri: (RM-1VS-107B)or Alt: (RM-1VS-110 Ch 5)	lled Elevated Release) D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾	Q ⁽²⁾
b. Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge 1st Alt: (Filter Paper & Charcoal Cartr 2nd Alt: (Continuous collection via RA 3rd Alt: (Grab samples every 12 hours)	idge for RM-1VS-112) SP Pump) or	NA or	NA	NA
c. System Effluent Flow Rate Measuring Device Pri: (FR-1VS-112) or Alt: (RM-1VS-110 Ch 10)	D	NA	R	Q
d. Sampler Flow Rate Measuring Devic Used for Sample Collection Pri: (RM-1VS-110 Ch 15) or Alt: (Rotometer: FM-1VS-103, and Va		NA 60)	R	Q
	cuum Gauge: PI-1VS-6	60)		

*During releases via this pathway. ***During purging of Reactor Containment via this pathway.

· •

	Beaver Valley Powe	er Station	, ,	Procedure Nun	•	C 2 02
Title:				Unit:	Level O	<u>C-3.03</u>
				1/2		al Skill Referen
ODCN	M: Controls for RETS and REMP Pro	ograms	· , 4	Revision:	Page Nu	imber:
	· · · · · · · · · · · · · · · · · · ·					<u>43 of 77</u>
	· · · · ·	ATTACHMENT	F			
		, Page 11 of 11				_
	ODCM CONTROLS: RETS	INSTRUMENT	FOR GASE	EOUS REL	EASES	5
	TA	BLE 4.3-13 (con	tinued)			
	BV-2 RADIOACTIV					
	INSTRUMENTATI	- • • ••••-				
	Pri = Primary Instr	uments, Alt =	= Alternate In	struments		
	: .		·			CHANNEL
•		CHANNEL	SOURCE	CHAN		FUNCTIONA
	INSTRUMENT	CHECK	<u>CHECK</u>	CALIBRA	ATION	<u>TEST</u>
	CRS Unfiltered Pathway (VV-2; Also calle	_ /) M ⁽⁴⁾ .	R ⁽³⁾⁽	െ	
a.	Noble Gas Activity Monitor Pri: (2HVS-RQ101B)	D.	М`', р ⁽⁴⁾ ***	K		Q(5)
Ь.	Particulate and Iodine Sampler	W	NA	NA		NA
	Pri: (Filter Paper & Charcoal Cartridge for 2			4.16	•	
	1st Alt: (Continuous collection via RASP P					
	2nd Alt: (Grab samples every 12 hours)					,
с.	Process Flow Rate Monitor	D	NA	• R		Q
•••	Pri: (Monitor Item 29 for 2HVS-VP101)					· · ·
d.	Sampler Flow Rate Monitor Used for Sample Collection	D	NA	R		Q
	Pri: (2HVS-FIT101)			2	· • • •	
2.SL	CRS Filtered Pathway (CV-2; Also cálled	Elevated Release)		• , ^		
	Noble Gas Activity Monitor	D	M ⁽⁴⁾ ,	R ⁽³⁾	(6) , · · ·	Q ⁽⁵⁾
•	Pri: (2HVS-RQ109B)	•	P ⁽⁴⁾ ***	States and a		41. V 18 1
b.	Particulate and Iodine Sampler	W	NA	NA	$\mathbf{k} \in \mathbf{k}$	NA
۰.	Pri: (Filter Paper & Charcoal Cartridge for 1st Alt: (Continuous collection via RASP P		Flow Path) or	**** * a		4
	2nd Alt: (Grab samples every 12 hours)		•	•, •	•	
с.	Process Flow Rate Monitor	D	NA	R	٠.	, Q
	Pri: (Monitor Item 29 for 2HVS-FR22) or	_	,		-	
	1st Alt: (2HVS-FI22A and FI22C) or	·	•	, .	••••	
	2nd Alt: (2HVS-FI22B and FI22D)	· ·		· .	· • •=	
d.	Sampler Flow Rate Monitor Used for Sample Collection	D	NA	R		Q
	Pfi: (Monitor Items 28 and 72 for 2HVS-D.	AU109B)				
	contamination Building Vent (DV-2)					
a.		D	M ⁽⁴⁾	R ⁽³⁾	(6)	Q ⁽⁵⁾
	Pri: (2RMQ-RQ301B)			· ·		
b.	Particulate and Iodine Sampler	W	NA	N	4	NA
	Pri: (Filter Paper & Charcoal Cartridge for					
	1st Alt: (Continuous collection via RASP P 2nd Alt: (Grab samples every 12 hours)	ump) or .				
C.	Process Flow Rate Monitor	NA	NA	N	4	NA
d.	Sampler Flow Rate Monitor Used for	D	NA	R		Q
	Sample Collection	2		IN IN	_	* .
	Pri: (2RMQ-FIT301)					
•						

.

سې د

	Beaver Valley Powe	er Station	· ·	Procedure Num		C-3.03
Title:				Unit: 1/	Level 0	
				1/2		ral Skill Reference
ODC	M: Controls for RETS and REMP Pro	ograms	•.	Revision:	Page Nu	umber:
	· · · · · · · · · · · · · · · · · · ·			3		44 of 77
1	4	ATTACHMENI				
	ODCM CONTROLS: RETS	Page 12 of 12 S INSTRUMENT		OUS RELI	EASE	S
ĺ	TA	BLE 4.3-13 (cor	ntinued)			
	BV-2 RADIOACTIVI	E GASEOUS EL	FI LIENT M	ONITORIN	JG	
	INSTRUMENTATIO					
	Pri = Primary Inst	ruments, Alt =	= Alternate In	struments		
1	•	. .				CHANNEL
	INSTRUMENT	CHANNEL <u>CHECK</u>	SOURCE <u>CHECK</u>	CHANN CALIBRA		FUNCTIONAL <u>TEST</u>
		CREUN	UNDUR	CALIDKA	non	1001
4. Co	ondensate Polishing Building Vent (CB-2)					
a.	Noble Gas Activity Monitor Pri: (2HVL-RQ112B)	D	M ⁽⁴⁾	R ⁽³⁾⁽⁶⁾)	Q ⁽⁵⁾
b.	Particulate and Iodine Sampler Pri: (Filter Paper & Charcoal Cartridge for 1 Ist Alt: (Continuous collection via RASP P 2nd Alt: (Grab samples every 12 hours)		NA	NA		NA
C.	Process Flow Rate Monitor	NA	NÁ	NA		NA
đ.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2HVL-FIT112)	D	NA	R		Q
5. W:	aste Gas Storage Vault Vent (WV-2)					•
a.	Noble Gas Activity Monitor Pri: (2RMQ-RQ303B)	D	M ⁽⁴⁾	R ⁽³⁾⁽⁶)	Q ⁽⁵⁾
b.	Particulate and Iodine Samples Pri: (Filter Paper & Charcoal Cartridge for 1st Alt: (Continuous collection via RASP P 2nd Alt: (Grab samples every 12 hours)		NA	NA		NA
c.	Process Flow Rate Monitor	NA	NA	NA		NA
d.	Sampler Flow Rate Monitor Used for Sample Collection Pri: (2RMQ-FIT303)	D	NA	R		Q

Beaver Valley Power Station	Procedure Nu		į
Title:	Unit:	1/2-ODC-3.03 Level Of Use:	,
inte:	1/2	General Skill Refer	enc
ODCM: Controls for RETS and REMP Programs	Revision:	Page Number:	
ATTACHMENT F	13	45 of 77	,
Page 13 of 13			:
ODCM CONTROLS: RETS INSTRUMENT FOR GAS	EOUS REI	LEASES	,
			•
<u>TABLE 4.3-13 (continued)</u>	,	•	
TABLE NOTATION		· .	•
······································	· .	• • •	ţ
(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate pathway and Control Room Alarm Annunciation occurs if any			
a. Instrument indicates measured levels above the alarm/tu	ip setpoint	· · · · · · · · · · · · · · · · · · ·	
b. Downscale failure.		•	,
c. Instrument controls not set in operate mode.	 		ł
(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate	that Contra	DI Room Alarm	;
Annunciation occurs if any of the following conditions exist:			
a. Instrument indicates measured levels above the alarm/t	rip setpoint	t.	:
b. Downscale failure.		• •	
c. Instrument controls not set in operate mode.		· · · · ·	÷.
(3) The initial CHANNEL CALIBRATION for radioactivity meas performed using one or more of the reference standards certifie or using standards that have been obtained from suppliers that assurance activities with NBS. These standards should permit intended range of energy and rate capabilities. For subsequent sources that have been related to the initial calibration should b per 18 months. This can normally be accomplished during refer	d be Natio participate calibrating CHANNE be used, at	nal Bureau of Stan in measurement the system over its L CALIBRATION intervals of at least	da S
⁽⁴⁾ A SOURCE CHECK may be performed utilizing the installed with a portable source to obtain an upscale increase in the exist			
response.			1
(5) The CHANNEL FUNCTIONAL TEST shall also demonstrate #Annunciation occurs if the instrument indicates measured leve			ıt.
⁽⁶⁾ The CHANNEL CALIBRATION shall also demonstrate that Coccurs if either of the following conditions exist:	Control Ro	om Alarm Annunci	at
1. Downscale failure.	·		:
2. Instrument controls are not set in operate mode.	:		•
· · · · · · · · · · · · · · · · · · ·			
		-	
			1
.•			

ŝ

:

:

į

:

....

•

•

:

• •

ł

.

	Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-3.03
Title:		Unit:	Level Of Use:
ODCM: Cont	rols for RETS and REMP Programs	1/2 Revision: 3	General Skill Reference Page Number: 46 of 77
	ATTACHMENT G		•
	Page 1 of 1 ODCM CONTROLS: LIQUID EFFLUENT CON	ΙΩΈΝΙΤΟ ΑΤΙ	ON
	ODEM CONTROLS. EIGOID ENTEDENT CON	CENTRAL	OR
CONTROLS	: LIQUID EFFLUENT CONCENTRATION		
3.11.1.1	In accordance with BV-1 and BV-2 Technical Specific concentration of radioactive material released at any (2.01, Figure 5-1) shall be limited to 10 times the EC's Appendix B (20.1001-20.2401), Table 2, Column 2 for or entrained noble gases. This is referred to as the OI (OEC). For dissolved or entrained noble gases, the co uCi/ml total activity.	time from the s specified in or radionucli DCM Effluer	site (see 1/2-ODC- 10 CFR Part 20, des other than dissolve at Concentration Limit
Applicability	: At all times.		Ţ
Action:	· ·		
	the concentration of radioactive material released from eding the above limits; immediately restore the concentr		
	nit a Special Report to the Commission within 30 days i 203(a)(2)(v) and 10 CFR 50.4(b)(1).	in accordance	with 10 CFR
c. The p	provisions of ODCM CONTROL 3.0.3 are not applicab	le.	
SURVEILL	ANCE REQUIREMENTS		
4.11.1.1.1	Radioactive liquid wastes shall be sampled and analy analysis program of ODCM Control 3.11.1.1, Table		g to the sampling and
		cordance wit	h 1/2 ODC-2 01 to
4.11.1.1.2 *-	The results of radioactive analysis shall be used in ac assure that the concentration at the point of release an ODCM CONTROL 3.11.1.1.		

- n	TT_11_	Demon		•	Procedure No	imber:		-
Bea	iver Valley	Power Stat	.10n			1/2-ODC-3	3.03	-
tle:					Unit:	Level Of Us		
					1/2 Revision:	General S		erence
DCM: Controls	for RETS and RE	EMP Programs			3	-	. of <u>77</u> _	
		ATTACH	IMENT G					
		Page	2 of 2					
. '	ODCM CONTR	OLS: LIQUID I	EFFLUENT	CONCE	NTRATI	ON		
								;
ORVEILLANCI	E REQUIREMEN	NIS (continued)	• •					7
Tu Bu is ho 4.11.1.1.5 Pri ba	hen BV-2 primar irbine Building Sump con- ilding Sump con- reached, the Turb ld tank (2SGC-T ior to the BV-2 R sin 16, a grap san nsitivity of at leas	ump shall be obt centration does r ine Building Sur K21A or 2SGC- ecirculation Dra nple will be take	ained every fot exceed mp shall be TK21B). in Pump(s) n. The san	8 hours to 1 OEC. Co routed to (2DAS-For ples will	o ensure Ince it is Steam G 215A/B) be analyz	that the Tu letermined enerator bl dischargin ed for gros	rbine that an owdow g to cat s activi	n OE n ch ty at
	mber of pump op							
· · ·		• • • • •		•			•	•
	• • •		• • •,					
	· .	۱ ۱ ۱				·		
· · ·	••••	; ,						÷
		· · · ·	• •	• •				÷
• •					. [.]			
as specified in OD	discharges are norm CM SURVEILLANC all be monitored as s	CE REQUIREMEN	T 4.11.1.1.3	and 4.11.1.	1.4. The B	V-2 Recircula	ition drai	in
			···					
•	, · · · · · · · · · · · · · · · · · · ·		•	•				
	1	· · · ·	. •				· .	
• • • •		• • • • •					•	
•			- • · .	. /• ·				
	• •	·, · · ·	· · ·					:
•							•	
			•	:				
		* ••• · · · · · · · · · ·	*	۰.				
								•
								•
								•
						-		;
								1
					•		•	

•

.

ì

.

÷

÷

2

.

ę

;

:

	Beaver V	alley Pow	er Station	Pro	edure Nu	•	`
				Uni		1/2-ODC-3.0 Level Of Use:	3
	· ·				1/2	General Skil	Il Refere
C	M: Controls for REI	'S and REMP P	norame ·	Rev	isioa:	Page Number: ,	
				·	3	48 0	<u>f 77</u>
			ATTACHMEN	TG			
		•	Page 3 of 3				
	ODCM	CONTROLS:	LIQUID EFFLU	JENT CONCENT	RATI	ON	
		•	TABLE 4.1	<u>l-1</u>		-	
	RADIOACT	IVE LIQUID W	ASTE SAMPLI	NG AND ANAL	<u>YSIS F</u>	ROGRAM	
				ſ <u></u>	TT	OWER	
				TYPEOE			
RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAMLIQUID RELEASE TYPESAMPLING SAMPLING FREQUENCYMINIMUM 							
			-				
		INEQUENCE	INEQUENCE				
	A. Batch Waste	D	D :	Principal Gamm			
				Emitters ^(f)	a	51-1	
	Release Tallks	Lacii Datcii	Lacii Dalcii	· · · · · · · · · · · · · · · · · · ·		18.6	
			M		· ·		
		-	141			11-5	
				•			
			M	f	<u>»</u>	1E-5	
		_					
LIQUID RELEASE TYPESAMPLING SAMPLING FREQUENCYMINIMUM ANALYSIS FREQUENCYTYPE OF ACTIVITY ANALYSIS (LLD) (uCi/ml)(a)A. Batch Waste Release Tanks(d)P Each Batch(h)P Each Batch(h)P Each Batch(h)Principal Gamma Emitters(f)PMDissolved And Entrained Gases (Gamma Emitters)1E-5PMH-31E-5							
		Р	Q	Sr-89, Sr-90		5E-8	
•		Each Batch ^(h)	Composite ^(b)	Fe-55	- <u> </u>	1E-6	
	B. Continuous	Grab Sample ^(g)	W	Principal Gamm	a	5E-7	[
	Releases ^{(e)(g)}		Composite ^(c)	Emitters ^(f)			•
		1		I-131		1E-6	1.
		Grab Sample ^(g)	M	Dissolved And	i	1E-5	1
	•			Entrained Gase			1
				(Gamma Emitte			
		Grab Sample ^(g)	M	H-3		1E-5	1
			Composite ^(c)				ł
	•			Gross Alpha		1E-7	
		Grab Sample ^(g)	Q	Sr-89, Sr-90	_	5E-8 ·	1
	·#2		Composite ^(c)	Fe-55		1E-6	1

	Title:		Unit:	Level C	Of Use:	
			1/2 Revision:			fer
	ODCM: Controls for RETS and REMP Programs	. ¹	<u>3</u>	rage N	<u>49 of 77</u>	1 :
ſ	ATTACHMENT G					
	E to Page 4 of 4					۰.
	ODCM CONTROLS: LIQUID EFFLUENT CON	NCE	NTRAT	ION		•
	TABLE 4.11-1 (continued)					,
	TABLE NOTATION					;
	(a) The LLD is the smallest concentration of radioactive material i	in a	sample	that will	be detect	ed
	95% probability with 5% probability of falsely concluding that					
	"real" signal.	۰.		· · · · ·		• ;
	For a particular measurement system (which may include rad	tiocł	hemical	separati	on):	د ب
	and the state of the state of the state of the state of the			-	-	-
-	$LLD = \underline{4.66 \text{ Sb}}$	`		· · · ·		•
	(E)(V)(2.22)(Y) $\exp(-\lambda \Delta T)$		•	• •	s 12	1 - -
	where:					•
·		.,				•
	LLD is the lower limit of detection as defined above (as pCi	per	unit ma	ss or vol	lume);	
1	1	•				
	S. is the standard deviation of the healter and counting rate	0- 0	f the co	untina m	te of a bl	
		or o	f the co	unting ra	te of a bla	anl
	sample as appropriate (as counts per minute);	or o	f the co	unting ra	te of a bla	anl
		or o	f the co	unting ra	ite of a bla	in l
	sample as appropriate (as counts per minute); E is the counting efficiency (as counts per transformation);	or o	f the co	unting ra	ite of a bla	
	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);	•		unting ra	ite of a bla	
	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);	•		unting ra	ite of a bla	
	 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 picocutor 	•		unting ra		
	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);	•		unting ra	ite of a bla	
	 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 picocu Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionute 	ırie;		unting ra	ite of a bla	
	 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 picocu Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionue 	urie; uclide	е;			
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionu ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant effluent); 	urie; uclide the uent s	e; sample samples	collectio		
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionud ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant effluent); 	urie; uclide the uent s	e; sample samples	collectio).	on period)	an
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionue ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflue The value of S_b used in the calculation of the LLD for a determine 	urie; iclida the ient s	e; sample samples on syster	collectio). n shall b	on period) be based of	an n t
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionu ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflu The value of S_b used in the calculation of the LLD for a dete actual observed variance of the background counting rate or 	1/2 General Skill Reference Revision: Page Number: 3 49 of 77 ATTACHMENT G 49 of 77 Page 4 of 4 ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION TABLE 4.11-1 (continued) TABLE 4.11-1 (continued) TABLE 11-1 (continued) TABLE 4.11-1 (continued) TABLE 4.11-1 (continued) TABLE 4.11-1 (continued) The LLD is the smallest concentration of radioactive material in a sample that will be detected wi 25% 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 = 4.66 Sb (E)(V)(2.22)(Y) exp(-\DT) where: 4.66 Sb LLD is the lower limit of detection as defined above (as pCi per unit mass or volume); Sb 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); \LD is the elapsed time between sample collection (or end of the sample collection pe				
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionu ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflu The value of S_b used in the calculation of the LLD for a dete actual observed variance of the background counting rate or 	the ectio of the tical	e; sample samples on syster he coun	collectio). n shall b ting rate	on period) be based of of the bla	an n ti
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionu ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflu The value of S_b used in the calculation of the LLD for a dete actual observed variance of the background counting rate or samples (as appropriate) rather than on an unverified theoret values of E, V, Y and ΔT should be used in the calculations. 	alley Power Station 1/2-ODC-3.03 Usit: LevelOfUse: []/2 General Skill Reference S and REMP Programs Revision: ATTACHMENT G				
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionus ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflu The value of S_b used in the calculation of the LLD for a dete actual observed variance of the background counting rate or samples (as appropriate) rather than on an unverified theoret values of E, V, Y and ΔT should be used in the calculations. 	the clide the ectio of the tical	e; sample samples on syster he coun ly predi	collectio). n shall b ting rate cted vari	on period) be based of of the bla iance. Typ ity of a	an n ti ank
	 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 picocur Y is the fractional radiochemical yield (when applicable); λ is the radioactive decay constant for the particular radionu ΔT is the elapsed time between sample collection (or end of time of counting (for environmental samples, not plant efflu The value of S_b used in the calculation of the LLD for a dete actual observed variance of the background counting rate or samples (as appropriate) rather than on an unverified theoret values of E, V, Y and ΔT should be used in the calculations. 	the clide the ectio of the tical	e; sample samples on syster he coun ly predi	collectio). n shall b ting rate cted vari	on period) be based of of the bla iance. Typ ity of a	an n tl ank

Title: ODCM: Controls for RETS	and REMP Programs	Unit: 1/2	1/2-ODC-3.03 Level Of Use:
ODCM: Controls for RETS	and KEMP Programs	Revision:	General Skill Reference Page Number:
		3	50 of 77
	ATTACHMENT G Page 5 of 5		
ODCM C	CONTROLS: LIQUID EFFLUENT CON	CENTRATI	ON ·
	TABLE 4.11-1 (continued)		
	. <u>TABLE NOTATION</u>		· ·
of liquid waste discl	e is one in which the quantity of liquid san harged and in which the method of sampli ive of the liquids released.		
effluents, samples s stream. Prior to ana	e of the quantities and concentrations of ra hall be collected continuously in proportion alyses, all samples taken for the composite ample to be representative of the effluent r	on to the rate shall be the	of flow of the effluent
	ts when the discharge of liquid wastes is i es, each batch shall be isolated, and then t ling.		
e.g., from a volume	e exists when the discharge of liquid wast of a system having an input flow during t uilding Drains and the AFW Pump Bay D d continuous when the primary to second	he continuo rain System	us release. Releases and Chemical Waste
following radionucl and Če-144. This li Other peaks which be identified and re reported as "less tha level for that nuclid calculations. When	ha emitters for which the LLD specification lides: Mn-54, Fe-59, Co-58, Co-60, Zn-62 ist does not mean that only these nuclides are measurable and identifiable, together v ported. Nuclides which are below the LL an" the nuclide's LLD, and should not be r le. The "less than" values should not be u in unusual circumstances result in LLD's hi he Annual Radioactive Effluent Release R	5, Mo-99, C are to be de with the abo D for the an eported as b sed in the re gher than re	s-134, Cs-137, Ce-141, tected and reported. ve nuclides, shall also alyses should be eing present at the LLD quired dose
	is identified in the secondary system, a R count for the radioactivity that will eventu		
	2 Recirculation Drain Pump(s) are dischar by means of a grab sample taken every 4 h		

¢

',

<u> </u>	11 D 0	Procedure Nu	imber:
	Illey Power Station		1/2-ODC-3.03
Title:	•	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Controls for RETS	and REMP Programs	Revision:	Page Number:
	ATTACHMENT H	<u> 1 3 </u>	51 of 77
	Page 1 of 1		
IO · · · · · OI	DCM CONTROLS: LIQUID EFFLUE	NT DOSE	· .
CONTROLS: LIQUID EFF	LUENT DOSE	· / : ·· ·	
dose or dose in liquid efflu limited: a. Durin	e with BV-1 and BV-2 Technical Speci commitment to MEMBER(S) OF THE uents released from the reactor unit (see ng any calendar quarter to less than or ea is than or equal to 5 mrem to any organ,	PUBLIC from 1/2-ODC-2.0 qual to 1.5 mr	n radioactive materials)1 Figure 5-1) shall be
Applicability:At all timeAction:a.a.With the calculated of any of the above limeCFR 20.2203(a)(2)(1)exceeding the limit(2)the proposed correctabove limits.the drinking water set	ng any calendar year to less than or equa han or equal to 10 mrem to any organ. nes. dose from the release of radioactive ma hits, prepare and submit to the Commiss v) and 10 CFR 50.4(b)(1), a Special Re s) and defines the corrective actions to be tive actions to be taken to assure the sub Special Report shall also include (1) the ource and (2) the radiological impact or equirements of 40 CFR 141, Safe Drinki	terials in liqui sion within 30 port which ide be taken to rec osequent relea e results of rac n finished drin	id effluents exceeding days, pursuant to 10 entifies the cause(s) for duce the releases, and ses will be within the diological analyses of iking water supplies
b. The provisions of O	DCM CONTROL 3.0.3 are not applicate	ble.	
SURVEILLANCE REQUI	REMENTS	Production of the second se	•
		:	
	ations. Cumulative dose contributions in accordance with 1/2-ODC-2.01 at lea	-	
* Applicable only if drinkin the plant discharge (three	ng water supply is taken from the receiv miles downstream only).	ing water bod	y within three miles of

– – – – – – – – – – – – – – – – – – –	Beaver Valley Power Station	Procedure Nu	
Title:		Unit:	1/2-ODC-3.03 Level Of Use:
		1/2 Revisioa:	General Skill Reference Page Number:
ODCM: Contr	ols for RETS and REMP Programs	3	-52 of 77
	ATTACHMENT I Page 1 of 1		•
	ODCM CONTROLS: LIQUID RADWASTE TREATM	MENT SY	STEM
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	e radioactiv cted doses e 5-1) when	ve materials in each due to liquid effluent n averaged over 31 days
Applicability:	At all times.		
Action:	·		
and su	iquid waste being discharged without treatment and exce bmit to the Commission within 30 days pursuant to 10 C)(1) a Special Report which includes the following inform	CFR 20.220	
1.	Identification of the inoperable equipment or subsystem	ns and the	reason for inoperability.
2.	Action(s) taken to restore the inoperable equipment to c	operational	status, and
3.	Summary description of action(s) taken to prevent a rec	urrence.	
b. The pi	ovisions of ODCM CONTROL 3.0.3 are not applicable.	•	
SURVEILLA	NCE REQUIREMENTS		
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	l days, in accordance

Beaver Valley Power Station	Procedure N	lumber: 1/2-ODC-3.03
itle:	Unit:	Level Of Use:
	1/2 Revision:	General Skill Reference Page Number:
ODCM: Controls for RETS and REMP Programs	3	53 of 77
ATTACHMENT J Page 1 of 1 ODCM CONTROLS: LIQUID HOLDUP TA	ANKS	
CONTROLS: LIQUID HOLDUP TANKS		
3.11.1.4 In accordance with BV-1 and BV-2 Technical Specifica radioactive material contained in each of the following t listed below, excluding tritium and dissolved or entraine	tanks shal ed noble g	l be limited to the values gases.
 a. ≤ 21 Curies: 1BR-TK-6A (Unit 1 Primary Water Stockson, State Stat	orage Tan Drain Tanl Drain Tanl rage Tank Storage T	k) k) <) -RWST) Fank-RWST)
APPLICABILITY: At all times.		
ACTION:		
a. With the quantity of radioactive material in any of t the above limit, immediately suspend all additions of and within 48 hours reduce the tank contents to with	of radioac	tive material to the tank
 b. Submit a Special Report in accordance with 10 CFI include a schedule and a descritpion of activities placements to within the specific limits. 		•
c. The provisions ODCM Control 3.0.3 are not applic	able.	
SURVEILLANCE REQUIREMENTS		<u> </u>
4.11.1.4.1 The quantity of radioactive material contained in each of the Unit 1 and 2 RWST's) shall be determined to be wirepresentative sample of the tank's contents at least one materials are being added to the tank.	of the abo thin the al	ve listed tanks (except bove limit by analyzing a
4.11.1.4.2 <u>SINCE</u> additions of radioactive material to the Unit 1 a at the end of a refueling outage (i.e.; drain down of the <u>THEN</u> compliance to this limit shall be performed as for	reactor ca	
The quantity of radioactive material contained in the U determined to be within the above limit by analyzing a contents within 7 days after transfer of reactor cavity w RWST.	represent	ative sample of the tank's

;

....

	Beaver Valley Power Station	Procedure No	•
litle:	Beaver valley I ower Station	Unit	1/2-ODC-3.03 Level Of Use:
	· · · · · · · · · · · · · · · · · · ·	1/2	General Skill Reference
DDCM: Con	trols for RETS and REMP Programs	Revision:	Page Number: 54 of 77
	ATTACHMENT K		
	Page 1 of 1 ODCM CONTROLS: GASEOUS EFFLUENT	DOSE RAT	E
		20021011	
CONTROL	S: GASEOUS EFFLUENT DOSE RATE		
3.11.2.1	In accordance with BV-1 and BV-2 Technical Specif dose rate in the unrestricted areas (see 1/2-ODC-2.02 materials released in gaseous effluents from the site s values:	Figure 5-1)	due to radioactive
	a. The dose rate limit for noble gases shall be ≤ 5 3000 mrem/yr to the skin*, and .	00 mrem/yr to	o the total body and \leq
	 b. The dose rate limit, inhalation pathway only, for radionuclides in particulate form (excluding C-eight days shall be ≤ 1500 mrem/yr to any organ 	14) with half	
<u>Applicabilit</u>	y: At all times.		
Action:			
	he dose rate(s) exceeding the above limits, immediately ne above limits(s), and	decrease the	release rate to compl
	t a Special Report to the Commission within 30 days pu CFR 50.4(b)(1).	rsuant to 10	CFR 20.2203(a)(2)(v
c. The pr	ovisions of ODCM CONTROL 3.0.3 are not applicable		
SURVEILL	ANCE REQUIREMENTS		
4.11.2.1.1	The dose rate due to noble gaseous effluents shall be	determined	to be within the abov
· · · · · · · · · · · · · · · · · · ·	limits in accordance with 1/2-ODC-2.02.		
4.11.2.1.2	The dose rate, inhalation pathway only, for I-131, triparticulate form (excluding C-14) with half-lives gree effluents, shall be determined to be within the above methods and procedures of the ODCM by obtaining performing analyses in accordance with the samplin ODCM Control 3.11.2.1, Table 4.11-2.	eater than eight limits in acc representativ	ht days in gaseous ordance with the e samples and
*During con	tainment purge the dose rate may be averaged over 960 min	ites.	. .
•		· •	

•

•

•• •

:

. :

,

Beaver V	alley Powe	r Station		Procedure Nu		-
					/2-ODC-3.03	•
IUC.				Unit: 1/2	Level Of Use: General Skill R	. : eferene
DCM. Controls for DET			h	<u> </u>	Page Number:	CICICIK
DDCM: Controls for RET	S and REMP Pro	grams		3	55 of 7	7
	A	TTACHMENT	Г К		<u> </u>	<u></u>
	· ·	Page 2 of 2				
	M CONTROLS:					
ODC	WI CONTROLS:	OASEOOS EI	TLUENI DU	SCRAI	5	•
	9 ja	TABLE 4.11	-2			5
•		111000-1.11	<u>- 4</u>			:
RADIOACTIV	<u>'E GASEOUS W</u>	ASTESAMPI	ING AND AN	AT YSIS	PROGRAM	`
	<u>B 0.102000 11</u>			1101010	INCOMM	
	•	MINIMUM	TYPE	TO	OWER LIMIT	- AC
GASEOUS	SAMPLING	ANALYSIS	OF		DETECTION	
RELEASE	1			,		
1 · ·	FREQUENCY	FREQUENCY			(LLD)	
TYPE	· · · · · · · · · · · · · · · · · · ·	·	ANALYSI	<u>s</u>	(uCi/ml) ^(a)	
A. Waste Gas Storage] P	P	Principal	· · · · · ·	1E-4	
Tank	Each Tank	Each Tank	Gamma	· · · ·		
	Grab Sample		⁻ Emitters ^(g)			•
	Each Tank*	Each Tank*	H-3*		1E-6	÷
	Grab Sample					2
B. Containment Purge	P	Р .	Principal Gan	100	1E-4	
	Each Purge ^(b)	Each Purge ^(b)	Emitters ^{(g})	TTOAL	
		Each Fuige				
	Grab Sample		H-3		1E-6	;
C. Ventilation	M ^{(b)(c)(e)}	M ^(b)	Principal Gan	nma	1E-4	
Systems ^(h)	Grab Sample	and a track of the	Emitters ^(g))		· ;]
V.V-1 (UI PAB/Ventilation Vent)	· · · ·		H-3		1E-6	
CV-1 (U1 Rx Cont/SLCRS Vent)			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		11.70	·
PV-1/2 (U1/2 GW/Process Vent)		1. .			:	
VV-2 (U2 SLCRS Unfiltered Path) CV-2 (U2 SLCRS Filtered Path)						÷ [
DV-2 (U2 Decon Bldg Vent)			1	·		,
WV-2 (U2 Waste Gas Vault Vent)			· ···			: · }
CB-2 (U2 Cond Pol Bidg Vent)					`	
		-	· ·		, i	
	1	N 1 1		· .	· · · · · · · · ·	;
			1	1		

* 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.

	Beaver	Valley Pow	er Station	Pr	ocedure Nun 1	nber: /2-ODC-3.03
rid	<u> </u>	· .		U	nit: 1/2	Level Of Use: General Skill Referenc
DI	OCM: Controls for RI	ETS and REMP P	rograms		evision: 3	Page Number: 56 of 77
	OD	CM CONTROLS	ATTACHMEN Page 3 of 3 GASEOUS I	3	ERATE	1
		<u>T</u> /	ABLE 4.11-2 (c	continued)		
	RADIOACT	IVE GASEOUS V	WASTE SAME	LING AND ANA	ALYSIS	PROGRAM
	GASEOUS	SAMPLING	MINIMUM ANALYSIS	TYPE OF		WER LIMIT OF DETECTION
	RELEASE TYPE	FREQUENCY	•	ANALYSIS		(LLD) (uCi/ml) ^(a)
	D. All Ventilation Systems Listed Above (in C.) Which Produce	Continuous ^(f)	W ^(d) Charcoal Sample	<u>I-131</u> I-133		<u>1E-12</u> 1E-10
	Continuous Release	Continuous ⁽¹⁾	W ^(d) Particulate Sample	Principal Gamm Emitters ^(g) (I-131, Others)	ia	1E-11
		Continuous ^(f)	M Composite Particulate Sample	Gross Alpha		1E-11
		Continuous ⁽¹⁾	Q Composite Particulate Sample	Sr-89, Sr-90		1E-11
		Continuous ⁽¹⁾	Noble Gas Monitor	Noble Gases Gross Beta And Gamma	ŀ	1E-6

.

1

:

:

`	Beaver Valley Power Station	•	Procedure N	1/2-ODC-3.03
Title:			Unit: 1/2	Level Of Use: General Skill Reference
ODCM	Controls for RETS and REMP Programs		Revision:	Page Number:
	ATTACHMENT K		3	<u> </u>
	Page 4 of 4			
	ODCM CONTROLS: GASEOUS EFFL	UENT D	OSE RAT	Ë .
• :	<u>TABLE 4.11-2 (contin</u>	nued)		
	TABLE NOTATIC	<u>)N</u>		
		· . ·.		
(a)	The Lower Limit of Detection (LLD) is defined in Table Not	ation (a) of	ODCM Co	ontrol 3.11.1.1, Table 4.11
•	1 for ODCM Surveillance Requirement 4.11.1.1.			-*** * * *
(b)	Samples (grab particulate, iodine & noble gas) and analysis s			
	STARTUP, or a THERMAL POWER change exceeding 159 hour period. This requirement does not apply if (1) analysis			
÷.	concentration in the primary coolant has not increased more			
•	shows that effluent activity has not increased more than a fac	tor of 3.	· · · · ·	· · · · ·
	<u>Clarification</u> : All samples shall be obtained within 24 hours and analyzed within 48 hours of reaching the intended steady			ed steady state power lev
	Applicability: Unit 1 Ventilation Systems (VV-1, CV-1 and	/or PV-1/2), or Unit 2	Ventilation Systems (VV
	CV-2 and/or PV-1/2), as appropriate. Specifically, sample th 3 increase on the noble gas effluent monitor. (3.1.16) (3.1.18)	ne ventilati	on release p	ath(s) that show a factor o
(c)	Tritium grab samples shall be taken at least once per 24 hour the refueling canal area) when the containment refueling can completion of vessel defueling. Sampling shall resume upor	al is floode	d. Sampling	g may be terminated after
	Applicability - (Mode 6): Unit 1 Ventilation System (VV-1 CV-2), that is aligned to the Reactor Containment Building a release path, samples may be obtained from the Reactor Con	tmosphere	. In lieu of	sampling the ventilation
(d)	Part 1: Samples (continuous particulate & iodine) shall be c be completed within 48 hours after changing, or after remov			er 7 days and analyses sha
•	Applicability for Part 1: Unit 1 and Unit 2 Ventilation Systems WV-2 & CB-2).	tems (VV-	1, CV-1, PV	Y-1/2, VV-2, CV-2, DV-2,
• • •	Part 2: Samples (continuous particulate & iodine) shall also 7 days following each SHUTDOWN, STARTUP, or THER THERMAL POWER within a 1 hour period and analyses sh When samples collected for 24 hours are analyzed, the corre 10. This requirement does not apply if: (1) analysis shows to concentration in the reactor coolant has not increased more to shows that effluent activity has not increased more than a factor	MAL POW all be com sponding I that the DC than a factor	VER change pleted withi LDs may b SE EQUIV	exceeding 15% of RATE n 48 hours of changing. e increased by a factor of ALENT I-131
	Clarification: All samples shall be changed within 24 hours and analyzed within 48 hours of reaching the intended stead			led steady state power lev
	Applicability for Part 2: Unit 1 Ventilation Systems (VV- Systems (VV-2, CV-2 and/or PV-1/2), as appropriate. Speci iodine samples for the ventilation release path(s) that show a monitor. (3.1.16) (3.1.18)	fically, cha	inge out the	continuous particulate,

•••

.....

•

•

.....

;

; •

.

	Reaver Valley Dower Station	Procedure Nu	
	Beaver Valley Power Station		1/2-ODC-3.03
l'itle:		Unit: <u>1/2</u> Revision:	Level Of Use: General Skill Reference Page Number:
ODCM:	Controls for RETS and REMP Programs	Revision:	58 of 77
	ATTACHMENT K Page 5 of 5 ODCM CONTROLS: GASEOUS EFFLUENT	DOSE RAT	E
(e)	Tritium grab samples shall be taken at least once per 7 days (from the the spent fuel pool area) whenever spent fuel is in the spent fuel pool.		entilation release path of
	<u>Applicability:</u> Unit 1 Ventilation System (CV-1), or Unit 2 Ventilation Fuel Handling Building atmosphere. In lieu of sampling the ventilation from the Fuel Handling Building atmosphere. ^(3.1.11) (3.1.19)	• •	· ·
(f)	The average ratio of the sample flow rate to the sampled stream flow is covered by each dose or dose rate calculation made in accordance with 3.11.2.2, and 3.11.2.3.		
	<u>Clarification:</u> The average ratio of the sample flow rate to the sample but it must not be used in dose and dose rate calculation. Specifically conservative dose calculations, and would compromise licensee respo 30-05. For information, a comprehensive three-year Radiation Monitor response to the unresolved item's concern that the effluent monitors w per ANSI N13.1. The results of that study concluded that a correction applied to particulate sample volume calculations and subsequent dos Specifically, the minimum CF of 2 must be utilized in-lieu of actual ra stream flow rate. In summary, the minimum CF of 2 provides adequa particulate sample collection. ^(3.2.13)	r, use of this ra onse to NRC U or Particle Stu vere not collec n factor (minin e and dose rate atios of sample	tio would provide non- Inresolved Item 50-334/83- dy was performed in ting representative samples num CF of 2) must be e calculations. e flow rate to the sampled
	Applicability: Unit 1 Ventilation Systems (VV-1, CV-1 & PV-1/2), a CV-2).	and Unit 2 Ver	ntilation Systems (VV-2 &
(g)	The principal gamma emitters for which the LLD specification will ap radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-14 does not mean that only these nuclides are to be detected and reported identifiable, together with the above nuclides, shall also be identified the LLD for the analyses should not be reported as being present at thunusual circumstances result in LLD's higher than required, the reaso Radioactive Effluent Release Report.	B for gaseous e 44 for particula d. Other peaks and reported. he LLD level for	missions and Mn-54, Fe- ate emissions. This list s which are measurable and Nuclides which are below or that nuclide. When
(h)	Only when this release path is in use.		(
· · · · ·	Applicability: Unit 1 and Unit 2 Ventilation Systems (VV-1, CV-1 CB-2).	, PV-1/2, VV	-2, CV-2, DV-2, WV-2 &

T

•

•

V

1.

.

Beaver Valley Power Station	Procedure No	
ide:	Unit:	1/2-ODC-3.03 Level Of Use:
	1/2	General Skill Referen
DDCM: Controls for RETS and REMP Programs	Revision:	Page Number: 59 of 77
ATTACHMENT L	/	
Page 1 of 1		
ODCM CONTROLS: DOSE- NOBLE	E GASES	•
CONTROLS: DOSE-NOBLE GASES		
 3.11.2.2 In accordance with BV-1 and BV-2 Technical Spect dose from the reactor unit in unrestricted areas (see noble gases released in gaseous effluents shall be linear a. During any calendar quarter, to ≤ 5 mrad for a for the second secon	e 1/2-ODC-2.02 imited to the fo	Figure 5-1) due to llowing:
beta radiation.		· . ·
b. During any calendar year, to ≤ 10 mrad for garadiation.	amma radiation	and ≤ 20 mrad for b
		•
Applicability: At all times.		
Action: a. With the calculated air dose from radioactive noble gases in	gaseous efflue	nts exceeding any of
Action: a. With the calculated air dose from radioactive noble gases in above limits, prepare and submit to the Commission with in 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report w exceeding the limit(s) and defines the corrective actions take proposed corrective actions to be taken to assure the subsequ limits.	30 days, pursu which identifies en to reduce the uent releases w	nts exceeding any of ant to 10 CFR the cause(s) for releases and the ill be within the above
Action: a. With the calculated air dose from radioactive noble gases in above limits, prepare and submit to the Commission with in 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report w exceeding the limit(s) and defines the corrective actions take proposed corrective actions to be taken to assure the subsequ- limits.	30 days, pursu which identifies en to reduce the uent releases w	nts exceeding any of ant to 10 CFR the cause(s) for releases and the ill be within the above
Action: a. With the calculated air dose from radioactive noble gases in above limits, prepare and submit to the Commission with in 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report w exceeding the limit(s) and defines the corrective actions take proposed corrective actions to be taken to assure the subsequ limits.	30 days, pursu which identifies en to reduce the uent releases w ble.	nts exceeding any of ant to 10 CFR the cause(s) for releases and the ill be within the abo
 Action: a. With the calculated air dose from radioactive noble gases in above limits, prepare and submit to the Commission with in 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report we exceeding the limit(s) and defines the corrective actions take proposed corrective actions to be taken to assure the subsequelimits. b. The provisions of ODCM CONTROL 3.0.3 are not applicated. 	30 days, pursu which identifies en to reduce the uent releases w ble.	nts exceeding any of ant to 10 CFR the cause(s) for e releases and the ill be within the abov
 Action: a. With the calculated air dose from radioactive noble gases in above limits, prepare and submit to the Commission with in 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report we exceeding the limit(s) and defines the corrective actions take proposed corrective actions to be taken to assure the subsequimits. b. The provisions of ODCM CONTROL 3.0.3 are not applicate SURVEILLANCE REQUIREMENTS 4.11.2.2.1 Dose Calculations. Cumulative dose contributions with 1/2-ODC-2.02 at least once every 31 days. 	30 days, pursu which identifies en to reduce the uent releases w ble.	nts exceeding any of ant to 10 CFR the cause(s) for e releases and the ill be within the abov

·

•

ł

•

. :

ł

•

· .

::

•

.

• 2 • • • • •

•

	Beaver Valley Power Station	Procedure N	. L
Title:		Unit:	1/2-ODC-3.03 Level Of Use:
		1/2	General Skill Reference
DDCM: Cor	ntrols for RETS and REMP Programs	Revision:	Page Number: 60 of 77
	ATTACHMENT M		
	Page 1 of 1 ODCM CONTROLS: DOSE - RADIOIODINES ANI	νραρτισι	ПАТЕС
	ODEM CONTROLS. DOSE- RADIORODINES AN		
CONTROL	S: DOSE-RADIOIODINES, RADIOACTIVE MATERI	AL IN PAR	TICULATE FORM,
	AND RADIONUCLIDES OTHER THAN NOBLE O	ASES	
•		······································	
3.11.2.3	In accordance with BV-1 and BV-2 Technical Specifi		
	dose to MEMBER(S) OF THE PUBLIC from radioio particular form (excluding C-14), and radionuclides (• •
•	lives greater than eight days in gaseous effluents relea		-
	ODC-2.02 Figure 5-1) shall be limited to the following		-
	a. During any calendar quarter to \leq 7.5 mrem to	any organ, a	nd
	b. During any calendar year to ≤ 15 mrem to any	organ.	
Applicabilit	ty: At all times.		
	-		
Action:			
	h the calculated dose from the release of radioiodines, rad		
	n, (excluding C-14), and radionuclides (other than noble at days, in gaseous effluents exceeding any of the above li		-
	nmission within 30 days, pursuant to 10 CFR 20.2203(a)		
Spe	cial Report, which identifies the cause(s) for exceeding the	ne limit and	defines the corrective
	ons taken to reduce the releases and the proposed correct	ive actions to	o be taken to assure the
subs	sequent releases will be within the above limits.		
b. The	provisions of ODCM CONTROL 3.0.3 are not applicable	le.	
SURVEILL	LANCE REQUIREMENTS		
4.11.2.3.1	Dose Calculations. Cumulative dose contributions sl	nall be deter	mined in accordance
	with 1/2-ODC-2.02 at least once every 31 days.		
	•		
			-

•

į

÷

;;

1_

	Beaver Valley Power Station	Procedure Nun	1ber: /2-ODC-3.03
ł	Title:	Unit:	Level Of Use:
	ODCM: Controls for RETS and REMP Programs	1/2 Revision:	General Skill Reference Page Number:
		3	61 of 77
	ATTACHMENT N Page 1 of 1		;
	ODCM CONTROLS: GASEOUS RADWASTE TREAT	MENT SY	STEM
-	CONTROLS: GASEOUS RADWASTE TREATMENT SYSTEM	· .	
	3.11.2.4 In accordance with BV-1 and BV-2 Technical Specifical Radwaste Treatment System and the Ventilation Exhaus to reduce radioactive materials in gaseous waste prior to projected gaseous effluent air doses due to gaseous efflu (see 1/2-ODC-2.02 Figure 5-1), when averaged over 31 gamma radiation and 0.4 mrad for beta radiation. The a Ventilation Exhaust Treatment System shall be used to r gaseous waste prior to their discharge when the projecte releases from the reactor unit (see 1/2-ODC-2.02 Figure would exceed 0.3 mrem to any organ.	t Treatmen their disch ent release days, woul ppropriate reduce radio d doses duo	t System shall be used arge when the s from the reactor unit d exceed 0.2 mrad for portions of the bactive materials in to gaseous effluent
	Applicability: At all times.	•	
: •	Action:		
	a. With gaseous waste being discharged without treatment and in prepare and submit to the Commission within 30 days, pursuan 10 CFR 50.4(b)(1), a Special Report which includes the follows	t to 10 CFR	20.2203(a)(2)(v) and
	1. Identification of the inoperable equipment or subsystem	s and the re	eason for inoperability,
	2. Action(s) taken to restore the inoperable equipment to o	perational	status, and
	3. Summary description of action(s) taken to prevent a rec	urrence.	· · · · · · · · · · · · · · · ·
	b. The provisions of ODCM CONTROL 3.0.3 are not applicable.	,. .	
	SURVEILLANCE REQUIREMENTS	· .	· · · ·
	4.11.2.4.1 Doses due to gaseous releases from the site shall be pro accordance with 1/2-ODC-2.02.		
	and the state of the <u>Setting of</u> the state of the stat	*	· · · ·
•			- :
		•	

!

.

.

....

ł

,

.

	· · · · · · · · · · · · · · · · · · ·	•	
· ·	Beaver Valley Power Station	Procedure Nu	imber: 1/2-ODC-3.03
Title:		Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Cor	trols for RETS and REMP Programs	Revision:	Page Number:
	ATTACHMENT O	<u> </u>	62 of 77
	Page 1 of 1		
	ODCM CONTROLS: GAS STORAGE TA	NKS	
	S: GAS STORAGE TANKS	: .	
3.11.2.5	In accordance with BV-1 and BV-2 Technical Specifica radioactivity contained in the following gas storage tan gas values listed below (considered as Xe-133).		
	a. ≤52,000 Curies: Each BV-1 Waste Gas Decay Ta or GW-TK-1C)	ank (GW-T	K-1A, or GW-TK-1B,
	b. ≤19,000 Curies: Any connected group of BV-2 C (2GWS-TK25A thru 2GWS-TK25G)	Gaseous Wa	aste Storage Tanks
APPLICAB	ILITY: At all times.		
ACTION:	、		
a.	With the quantity of radioactive material in any gas stora immediately suspend all additions of radioactive materia reduce the tank contents to within the limit, nad	-	-
b.	Submit a Special Report in accordance with 10 CFR 50.4 a schedule and a description of activities planned and/or within the specified limits.		
c.	The provisions of ODCM Control 3.0.3 are not applicable	le.	-
ŞURVEILL	ANCE REQUIREMENTS	· ••,	
4.11.2,5.1	For BV-1 Waste Gas Decay Tanks: The quantity of rade ach BV-1 Waste Gas Decay Tank shall be determined least once per 24 hours when radioactive materials are Performance of this surveillance is required when the geolant is greater than 100 uCi/ml.	l to be with being adde	in the above limit at ed to the tank.
	For BV-2 Gaseous Waste Storage Tanks: The quantity contained in any connected group of BV-2 Gaseous W determined to be within the above limit at least once p materials are being added to the tanks.	aste Storag	e Tanks shall be

÷

Title:	eaver Valley Power Station	Procedure Nu	1/2-ODC-3.03	
The:		Uait:	Level Of Use:	
		1/2 Revision:	General Skill R Page Number:	Reference
ODCM: Contro	s for RETS and REMP Programs			7
	ATTACHMENT P Page 1 of 1 ODCM CONTROLS: TOTAL DOSE		· · ·	
CONTROLS, 1	OTAL DOSE			· · ·
(1 1	n accordance with BV-1 and BV-2 Technical Specifical calendar year) dose or dose commitment to any MEME eleases of radioactivity and to radiation from uranium to ≤ 25 mrems to the whole body or any organ, except to ≤ 75 mrems.	BER OF TH	IE PUBLIC du ources shall be	e to limited
Applicability:	At all times.	- ·	(* ₁	:
Action:			4.,	:
units (inc CONTRO Commiss Special R prevent re conforma include an from uran calendar y radiation	or 3.11.2.3b, calculations shall be made including dire uding outside storage tanks, etc.) to determine whether L 3.11.4.1 have been exceeded. If such is the case, pre on within 30 days, pursuant to 10 CFR 20.2203(a)(2)(veport that defines the corrective action to be taken to re currence of exceeding the above limits and includes the nee with the above limits.' This Special Report, as define analysis that estimates the radiation exposure (dose) to ium fuel cycle sources, including all effluent pathways rear that includes the release(s) covered by this report.	the above pare and so y) and 10 C duce subse e schedule ned in 10 C o a MEMB and direct	limits of ODCM ubmit to the CFR 50.4(b)(1), quent releases to for achieving CFR 20.405(c), ER OF THE PU radiation, for th	√I a to shall
resulting include a of the rep request is	and concentrations of radioactive material involved, an trations. If the estimated dose(s) exceeds the above lim n violation of 40 CFR Part 190 has not already been co request for a variance in accordance with the provision ort is considered a timely request, and a variance is gra complete. visions of ODCM CONTROL 3.0.3 are not applicable.	d the cause nits, and if prrected, the s of 40 CFI nted until s	of the exposur the release cond e Special Repor R Part 190. Sul	ne s of e level dition rt shall bmittal
resulting include a of the rep request is b. The pro	and concentrations of radioactive material involved, an trations. If the estimated dose(s) exceeds the above lim n violation of 40 CFR Part 190 has not already been co request for a variance in accordance with the provision ort is considered a timely request, and a variance is gra- complete.	d the cause nits, and if prrected, the s of 40 CFI nted until s	of the exposur the release cond e Special Repor R Part 190. Sul	ne s of e levels dition rt shall bmittal
resulting include a of the rep request is b. The pro SURVEILLAN 4.11.4.1.1	and concentrations of radioactive material involved, an trations. If the estimated dose(s) exceeds the above lim n violation of 40 CFR Part 190 has not already been co request for a variance in accordance with the provision ort is considered a timely request, and a variance is gra- complete.	d the cause nits, and if prrected, the s of 40 CFI nted until s s effluents s MENTS 4.	of the exposur the release conc e Special Repor R Part 190. Sul taff action on th shall be determined.	ne s of e level dition rt shall bmittal he

÷

:

•

...

	Beaver Valley Power Station	Procedure N	
Title:		Unit:	1/2-ODC-3.03 Level Of Use: General Skill Reference
ODCM: Co	ontrols for RETS and REMP Programs	Revision:	Page Number: 64 of 77
	ATTACHMENT Q		
	Page 1 of 8 ODCM CONTROLS: REMP-PROGRAM REQU	JIREMEN	rs
<u>CONTROI</u>	S: RADIOLOGICAL ENVIRONMENTAL MONITORIN	IG PROGR	AM
environmer 3.12-1.	accordance with BV-1 and BV-2 Technical Specification 6. Intal monitoring program shall be conducted as specified in		
Applicabili Action:	ity: At all times.		
OD Rac as r requ una spece	th the radiological environmental monitoring program not loc CM Control 3.12.1, Table 3.12-1, prepare and submit to the diological Environmental Report, a description of the reaso equired and the plans for preventing a recurrence. Deviat uired sampling schedule if specimens are unobtainable due availability, malfunction of automatic sampling equipment cimens are unobtainable due to sampling equipment malfu complete corrective action prior to the end of the next samp	e Commiss ns for not c ons are per to hazardo and other le nction, eve	sion, in the Annual conducting the program mitted from the ous conditions, seasonal egitimate reasons. If ry effort shall be made
loc: Con to 1 con 3.1 rad rep	th the level of radioactivity in an environmental sampling r ations specified in ODCM Control 3.12.1, Table 3.12.1 exe ntrol 3.12.1, Table 3.12-2 when averaged over any calendar mmission within 30 days from the end of affected calendar 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1) which inc aditions, environmental factors or other aspects which caus 2.1, Table 3.12-2 to be exceeded. This report is not require ioactive was not the result of plant effluents; however, in s orted and described in the Annual Radiological Environment	ceeding the r quarter, pr quarter a S ludes an ev ed the limit ed if the me uch an ever intal Report	limits of ODCM repare and submit to the special Report pursuant aluation of any release is of ODCM Control easured level of nt, the condition shall be t.
	nen more than one of the radionuclides in ODCM Control 3 sampling medium, this report shall be submitted if:	5.12.1, Tabl	e 3.12-2 are detected in
	$\frac{\text{Concentration (1)}}{\text{Limit Level (1)} + \text{Limit Level (2)}} + \dots \ge 1.0$)	
sele rep from loc:	th milk or fresh leafy vegetable samples unavailable from the ected in accordance with ODCM CONTROL 3.12.2 and list lacement samples. The locations from which samples were m those required by ODCM Control 3.12.1, Table 3.12-1 ations from which the replacement samples were obtained onitoring program as replacement locations, if available.	ited in the (e unavailab nd the OD(DDCM, obtain le may then be deleted CM provided the
	e provisions of ODCM CONTROL 3.0.3 are not applicable	2.	
<u>SURVEIL</u>	LANCE REQUIREMENTS		
4.12.1.1	The radiological environmental monitoring samples sl Control 3.12.1, Table 3.12-1 from the locations given pursuant to be requirements of ODCM Control 3.12.1	in the ODC	CM and shall be analyzed

	Valley Power S		Uait:	/2-ODC-3.03
		1 日本	1/2	General Skill Refere
OCM: Controls for RI	ETS and REMP Program	ns Francis Para	Revision:	Page Number: 65 of 77
	ATTA	ACHMENT Q	.I	<u>. </u>
		age 2 of 8		
		MP-PROGRAM REQU	IREMENTS	5
	11	<u>ABLE 3.12-1</u>		
RADI	OLOGICAL ENVIRON	MENTAL MONITOR	ING PROG	RAM
EXPOSURE	NUMBER OF	SAMPLING AND	TYPE AND	FREQUENCY ^(a)
PATHWAY AND/OR		COLLECTION	OF ANALY	
SAMPLE	LOCATIONS	FREQUENCY	• • •	
1. AIRBORNE			· · · · · · · · · · · · · · · · · · ·	•
a. Radioiodine	5 locations	Continuous operation	Each radioid	odine canister.
And Particulates		of sampler with sample	•	· · · ·
٠,	1. One sample from a	collection at least	Analyze for	I-131;
	control location	weekly.	.	
	10-20 miles distant		Particulate s	
1. A.	and in the least prevalent wind	, , ,	Analyze for beta weekly	
·	direction		UCIA WEEKIY	3
			Perform gar	nma isotopic
	2. One sample from		analysis on	composite (by
	vicinity of	1		mple at least
	community having		quarterly.	
	the highest calculated annual	• ·		
Ч	average ground		•	
(1, 1, 2, 2, 3, 4, 5, 5, 5, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	level D/Q.			
$e_{i} = e_{i} + 1_{i}$				
2. DIRECT.	40 locations	Continuous	Gamma dos	e, quarterly.
RADIATION	, Marsha Kuadu A	measurement with	7 *	
	\geq 2 TLDs or a pres-	collection at least		•
an a	surized ion chamber at each	quarterly.		
	location.	J · · · ·		
- m4 -				
· · · · · · · · · · · · · · · · · · ·	•	······································		
) Analysia fragmanar	ma an annaling fragment	unless otherwise specifi	ed .	· •
				, , , , , , , , , , , , , , , , , , ,
		urs after filter change. Pe		a isotopic analysis o
each sample when gro	oss beta is >10 times the y	early mean of control sar	npies.	

.

: :	Valley Power S	/ L		
•				1/2-ODC-3.03
	· · ·		Unit:	Level Of Use: General Skill Reference
			1/2 Revision:	Page Number:
OCM: Controls for RE	TS and REMP Program	ms .	3	66 of 77
······································	ATT	ACHMENT Q	<i>J</i>	
		Page 3 of 8		•
		0		'
UDC	M CONTROLS: REI	MP-PROGRAM REQU	IREMENI	5
	TABLE	3.12-1 (continued)		
RADIC	DLOGICAL ENVIRON	NMENTAL MONITOR	ING PROC	GRAM
EXPOSURE	NUMBER OF	SAMPLING AND	TYPE AND	D FREQUENCY ^(a)
	SAMPLES AND	COLLECTION	OF ANAL	
	LOCATIONS**	FREQUENCY	OF ANAL	1.515
·				· .
3. WATERBORNE		}		
a. Surface	2 locations.	Composite* sample		topic analysis of
	1. One sample	collected over a period	composite.	sample by location
	upstream.	not to exceed 1 month.	monthly;	4
· · · ·	2. One sample		Tritium and	
	downstream.			sample at least
			quarterly.	
				•
b. Drinking	2 locations.	Composite* sample	I-131 analy	
		collected over a period	composite	sample;
		not to exceed 2 weeks.		
				otopic analysis of
		· · ·	composite	
			location) m	ionthly;
				alysis of composite
			sample qua	arterly.
	<u></u>			
c. Groundwater	N/A - No wells in low plant and river	er elevations between		
d. Sediment From Shoreline	1 location.	Semi-annually.	Gamma iso semi-annua	otopic analysis

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

*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.

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

	Valley Power S		·1	1/2-ODC-3.03
tic:	. /		Unit:	Level Of Use: General Skill Refere
			1/2 Revision:	Page Number:
DCM: Controls for R	ETS and REMP Program	ns .	3	67 of 77
	ATT	ACHMENT Q		· · · · · · · · · · · · · · · · · · ·
		lage 4 of 8		
, OD		MP-PROGRAM REQU	TREMENT	2
				0
	TABLE	3.12-1 (continued)		
			e	
. <u>RADI</u>	OLOGICAL ENVIRON	MENTAL MONITOR	ING PROC	RAM
	and the second second	ter syle same a		
EXPOSURE	NUMBER OF	SAMPLING AND) FREQUENCY ^(a)
PATHWAY AND/OR	SAMPLES AND	COLLECTION	OF ANAL	'SIS
SAMPLE	LOCATIONS**	FREQUENCY		
4. INGESTION	6		and the second	
a. Milk	4 locations. ^(b)	Atleast bi-weekly when		topic and I-131
		animals are on pasture;	analysis of	each sample.
	1. Three samples	at least monthly at		
· · ·	selected on basis of	other times.		
	highest potential			
	thyroid dose using milch census data.			1
	minen census uata.		t	
	2. One local large		- · `	
	dairy.			Sec. 25
	duny.			
b. Fish	2 locations.	Semi-annual. One	Gamma iso	topic analysis on
· ·		sample of available	edible port	
		species.		
c. Food Products	4 locations.	Annually at time of	Gamma isc	topic analysis and
(Leafy		harvest.		sis on edible
Vegetables)	1. Three locations	-	portion.	
	within 5 miles.		[· · · · ·	
· · · ·	2. One control			
	location.			
	iwation.		Sec. 201	

(*) 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.

;

. . . .

	Beav	er Valle	ey Power Statio	n 394	Procedure N	umber: 1/2-ODC-3.03	
Title: ODCM	· · · · · · · · ·	· .	REMP Programs		Unit: <u>1/2</u> Revision: 3	Level Of Use: General Skill Re Page Number: 68 of 77	
	(DDCM CO	ATTACHMI Page 5 o NTROLS: REMP-PRO	f 8	REMEN		
			TABLE 3	3.12-2			
	REP	ORTING	LEVELS FOR RADIO	ACTIVITY CON	CENTRA	ATIONS	
		· .	IN ENVIRONMEN	TAL SAMPLES		-	
				EPORTING LEVE	ELS		
	ANALYSIS	WATER (pCi/l)	AIRBORNE PARTICULATE OR GASES (pCi/m ³)	FISH (pCi/kg, WET)	MILK (pCi/l	BROAD LEAF VEGETABLES (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			•
a."	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		1	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.

lc:			· · ·	<u> </u>		Unit:	2-ODC-3.03 Level Of Use:	÷
						1/2 Revision:	General Skill Refer Page Number:	er
DC	M: Controls	tor RETS	and REMP Pro	ograms		3	69 of 77	
				ATTACHMENT Page 6 of 8 REMP-PROGE	-	IID EN ÆNTER		
		ODCIVI		<u>TABLE 4.12</u>		ZOIKEIMENIS		•
	<u>MAXI</u>	MUM VA	_	HE LOWER LI		DETECTION (LLD) ^{(2)(c)}	
			AIRBORNE	u managa sa pagina di ka			1	ז
	ANALYSIS	WATER (pCi/l)	PARTICULATE OR GAS (pCi/m ³)	· · ·	MILK (pCi/l)	FOOD PRODUCTS (pCi/kg, WET)		·
	Gross Beta	4	1E-2				N. H. L. 1972	
	H-3	2000 ^(d)						
	Mn-54	15		130	· · ·	•		
	Fe-59	30		260				l
	Co-58,60	15	1	130 en				
'4	Zn-65	30		260				ł
•	Zr-95	30 ^(c)	· .	$ W_{n,k} \leq f_{n,k} _{L^{2}}^{2} f_{n,k} _{L^{2}}^{2}$				
	Nb-95	15 ^(c)			·			
	I-131	1 ^(b)	7E-2	ter tigte i transfer	1	60		
	Cs-134 *	15 .	5E-2	130	15	60	150	
	Cs-137	18	6E-2	150	18	80	180	
	Ba-140	60 ^(c)		wo konto p	60			
	L <u>a</u> -140	15 ^(c)		ent (t. 1997) - ent	15	antenta anten 2011 - Norress		
2 4	· · · · ·	·		a de la competition de la comp	•••••••	•	······································	

. . .

a a constant a constant and constant a second second second second second and a second second second second sec a constant a special previous second secon a second secon second second

Beaver Valley Power Station	Procedure N	
Tide:	Unit:	1/2-ODC-3.03
	1/2	General Skill Reference
ODCM: Controls for RETS and REMP Programs	Revision:	Page Number: 70 of 77
ATTACHMENT Q Page 7 of 8 ODCM CONTROLS: REMP-PROGRAM F	REQUIREMENT	
TABLE 4.12-1 (continued	<u>1)</u>	
TABLE NOTATION		
 (a) The LLD is the smallest concentration of radioactive materia 95% probability with 5% probability of falsely concluding th "real" signal. 		
For a particular measurement system (which may include rad	liochemical sepa	ration):
$LLD = \underline{4.66 \text{ Sb}}$		
(E)(V)(2.22)(Y) exp ($-\lambda\Delta T$)	·	
where:		
LLD is the lower limit of detection as defined above (as	pCi per unit mas	s or volume);
S_b is the standard deviation of the background counting r sample as appropriate (as counts per minute);	ate or of the cou	nting rate of a blank
E is the counting efficiency (as counts per transformation	a);	
V is the sample size (in units of mass or volume);		
2.22 is the number of transformations per minute per pic	ocurie;	
Y is the fractional radiochemical yield (when applicable)	:	•

1_

 λ is the radioactive decay constant for the particular radionuclide;

11

 ΔT 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 ΔT should be used in the calculations.

Beaver Valley Power Station	Procedure Nu	umber: 1/2-ODC-3.03
Title:	Unit:	Level Of Use:
	1/2	General Skill Refere
ODCM: Controls for RETS and REMP Programs	Revision:	Page Number:
	3	71 of 77
ATTACHMENT Q		
Page 8 of 8	ייזאלדא אבר סדר	· ·
ODCM CONTROLS: REMP-PROGRAM REQU	UIKEMENI	٥.
TABLE 4.12-1 (continued)		
	. ,	- ···
TABLE NOTATION		
measurement system and not as <u>a posteriori</u> (after the fact) lin Analyses shall be performed in such a manner that the stated l routine conditions. Occasionally, background fluctuations, ur presence of interfering nuclides, or other uncontrollable circus unachievable. In such cases, the contributing factors shall be Annual Radiological Environmental Report.	LLD's will b navoidable s mstances ma	e achieved under mall sample sizes, t ay render these LLD
^(b) If no drinking water pathway exists, a value of 15 pCi/l may be	used.	
	· ·	
In parent and daughter are totaled, the most restrictive 1112 show	•	ea.
 (d) If no drinking water pathway exists, a value of 3000 pCi/l may (e) This list does not mean that only these nuclides are to be detected are measurable and identifiable, together with the above nuclide Padialogical Environmental Penert 	ed and repo	
 (e) This list does not mean that only these nuclides are to be detected are measurable and identifiable, together with the above nuclided Radiological Environmental Report. 	ed and repo es, shall be i	dentified in the Ani
 (c) This list does not mean that only these nuclides are to be detected are measurable and identifiable, together with the above nuclide Radiological Environmental Report. 	ed and repo es, shall be i	dentified in the Ani
(c) This list does not mean that only these nuclides are to be detected are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reporters, shall be i	dentified in the Ani
(c) This list does not mean that only these nuclides are to be detect are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reporters, shall be i	dentified in the Ani
(c) This list does not mean that only these nuclides are to be detected are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reportes, shall be i	dentified in the Ani
(e) This list does not mean that only these nuclides are to be detect are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reportes, shall be i	dentified in the Ani
(e) This list does not mean that only these nuclides are to be detect are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reportes, shall be i	dentified in the Ani
(e) This list does not mean that only these nuclides are to be detect are measurable and identifiable, together with the above nuclide Radiological Environmental Report.	ed and reportes, shall be i	dentified in the Ani

.'

Beaver Valley Power Station	Procedure Nu	mber: 1/2-ODC-3.03
Tide:	Unit: 1/2	Level Of Use: General Skill Reference
ODCM: Controls for RETS and REMP Programs	Revision: 3	Page Number: 72 of 77
ATTACHMENT R Page 1 of 1 ODCM CONTROLS: REMP - LAND	USE CENSUS	:
CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONIT	ORING - LAND	USE CENSUS
3.12.2 In accordance with BV-1 and BV-2 Technical Sp census shall be conducted and shall identify the I nearest residence, and the nearest garden of great leaf vegetation in each of the 16 meteorological s For elevated releases as defined in Regulatory G use census shall also identify the locations of all than 500 square feet producing fresh leafy vegeta sectors within a distance of three miles.	ocation of the nea ter than 500 squar sectors within a di uide 1.111, (Rev. milk animals and	rest milk animal, the e feet producing broad stance of five miles. 1), July, 1977, the land all gardens of greater
Applicability: At all times.	. ,	
Action:		
a. With a land use census identifying a location(s) which yie commitment greater than the values currently being calcul REQUIREMENT 4.11.2.3.1, prepare and submit to the CCFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special R location(s).	lated in ODCM SU	JRVEILLANCE 30 days, pursuant to 10
b. With a land use census identifying a milk animal location commitment (via the same exposure pathway) 20% greate are currently being obtained in accordance with ODCM C the Commission within 30 days, pursuant to 10 CFR 20.2 Special Report, which identifies the new location. The ne radiological environmental monitoring program within 30 program shall include samples from the three active milk calculated dose or dose commitment. Any replaced locati program after October 31 of the year in which this land us	er than at a locatio CONTROL 3.12.1 203(a)(2)(v) and be location shall be days, if possible. animal locations, ion may be deleted	n from which samples prepare and submit to 0 CFR 50.4(b)(1), a be added to the The milk sampling having the highest I from this monitoring
c. The provisions of ODCM CONTROL 3.0.3 are not applic	cable.	
SURVEILLANCE REQUIREMENTS		
4.12.2.1 The land use census shall be conducted at least of June 1 and October 1 using that information where by a door-to-door survey*, aerial survey, or by c	ich will provide th	ne best results, such as

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

Beaver Valley Power'S	tation		Procedure Nu	
Title:			Unit:	1/2-ODC-3.03 Level Of Use:
			1/2	General Skill
ODCM: Controls for RETS and REMP Program	ns pri e tele	: . · · · [Revision:	Page Number:
	ACHMENT S		3	73 of
ODCM CONTROLS: REMP - INTER	age 1 of 1	VCOM		
			11(1501)	
CONTROLS: RADIOLOGICAL ENVIRONM COMPARISON PROGRAM	ENTAL MONI	TORING	- INTER	LABORATOR
2 10 2 In accordance with DV 1 and D	V O Trachestard S			Them 2 analy
3.12.3 In accordance with BV-1 and B be performed on radioactive ma				
Drogram	- MA 122 25 26 2	- 17 July 1		aboratory Com
			a e 17 - 11	
			· .	•
	-	•		
At all times.			,	
			. 1	
Action:	nie ". Chr.	· .		
				,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
a. With analyses not being performed as rec				
a. With analyses not being performed as rec a recurrence to the Commission in the Ar				
a recurrence to the Commission in the Ar	nual Radiologio	cal Envir	onmental	
a recurrence to the Commission in the Atb. The provisions of ODCM CONTROL 3.	nual Radiologio	cal Envir	onmental	
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.	nual Radiologio 0.3 are not appli	cal Envir	onmental	
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS	nual Radiologio 0.3 are not appli	cal Envir cable.	onmental	
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS	inual Radiologio	cal Envir	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform	inual Radiologic D.3 are not appli ed as part of the	cal Envir cable.	onmental	Report.
 a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in 	onual Radiologic D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental	Report.
 a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform 	nual Radiologic D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	nual Radiologic D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental quired In adiologica	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologic D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental	Report.
a recurrence to the Commission in the At b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental	Report.
a recurrence to the Commission in the At b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental quired In adiologica	Report.
a recurrence to the Commission in the At b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental quired In adiologica	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental quired In adiologica	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re	onmental quired In adiologica	Report.
a recurrence to the Commission in the At b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.4 SURVEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.0 SUR VEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental quired In adiologica	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.0 SUR VEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental quired In adiologica	Report.
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3. SUR VEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental quired In adiologica	Report. terlaboratory l Environment
a recurrence to the Commission in the Ar b. The provisions of ODCM CONTROL 3.0 SUR VEILLANCE REQUIREMENTS 4.12.3.1 The results of analyses perform Comparison Program shall be in Report.	inual Radiologio D.3 are not appli ed as part of the ncluded in the A	cal Envir cable. above re annual Ra	onmental quired In adiologica	Report. terlaboratory l Environment

•

Beaver Valley Power Station			Procedure Number: 1/2-ODC-3.03			
Title:		Unit: 1/2	Level Of Use:			
ODCM: Controls for RETS and REMP Programs			General Skill Reference Page Number:			
		3	74 of 77			
	ATTACHMENT T Page 1 of 2		• •			
	ODCM CONTROLS: ANNUAL REMP RE	PORT				
CONTROLS:	ANNUAL REMP REPORT	· · · · · · · · · · · · · · · · · · ·				
ANNUAL RA	ADIOLOGICAL ENVIRONMENTAL OPERATING RE	PORT ⁽³⁾				
6.9.2 (old TS 6.9.1.10)	The Annual Radiological Environmental Operating Rep unit during the previous calendar year shall be submitted The report shall include summaries, interpretations, and of the Radiological Environmental Monitoring Program material provided shall be consistent with the objective Calculation Manual (ODCM) and in 10 CFR Part 50 A and IV.C.	d before N l analyses n for the re s outlined	fay 15 of each year. of trends of the results porting period. The in the Offsite Dose			
	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.					
- 40	• 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 Interlabor required by ODCM CONTROL 3.12.3.	oratory Cor	nparison Program			
	submittal may be made for a multiple unit site. The submittate mon to all units at the station.	al should co	mbine those sections that			

ł

ţ ´ .

•

:

• •

· · · · · · ·	in Companya in Angel Angel	· · · · · · · · · · · · · · · · · · ·			·· ··· .		•	1990 - 1 990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990	\checkmark	•
		ENVIRONMEN Name Of Facility Location Of Facili			OGRAM SUN et No rting Period	MARY		ODC	ODCM: Controls for RETS and	Beaver Valley
	MEDIUM OF PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TOTAL NUMBER LIMT OF ANALYSES DETEC		LOCATIONS WITH ANNUAL M NAME DISTANCE AND DIRECTION	(HIGHEST EAN MEAN(F) ^b RANGE ^b	CONTROL LOCATIONS MEAN(F) [®] RANGE [®]	NONROUTINE REPORTED MEASUREMENTS	ATTACHMENT T Page 2 of 2 M CONTROLS: ANNUAL R	and REMP Programs	ey Power Station
	4 Nominal V ourse limite	s of Detection (LLD) as defined	Lin Table Notation ⁴ of Table		01-311-11			T REMP REPORT	Unit: 1/2 Revision: 3	1
3 	Mean and range based	i upon detectable measurement	only. Praction of detectable r	measurement at specified 1	ocations is indic			· ·	$\nabla B = C$	1/2-0DC-3.03

-

	Beaver Valley Power Station		Procedure Number:				
		<u> </u>					
	rols for RETS and REMP Programs	1/2 Revision:	General Skill Reference Page Number:				
		3	76 of 77				
	ATTACHMENT U Page 1 of 2						
	ODCM CONTROLS: ANNUAL RETS	REPORTS					
CONTROLS:	ANNUAL RETS REPORT						
ANNUAL RA	ADIOACTIVE 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 mon returned to OPERABLE status within 30 days, corrected in a timely manner. This applies to the monitoring instrumentation channels required to CONTROLS 3.3.3.9 and 3.3.3.10.	and why the ir he liquid or ga	noperability was not seous effluent				
	• Any ODCM SURVEILLANCE REQUIREMENT deficiencies. This applies to monitoring, sampling and analysis and dose projection.						
	• The reasons when unusual circumstances resul ODCM CONTROL 3.11.1.1, Table 4.11-1 and 4.11-2.						
. section:	e submittal may be made for a multiple unit site. Th s that are common to all units at the station; however s, the submittal shall specify the releases of radioacti	r, for units with	n separate radwaste				

Beaver Valley Power Station	Procedure N	Procedure Number:		
	Unit:	1/2-ODC-3.03 Level Of Use:		
DDCM: Controls for RETS and REMP Programs	<u> </u>	General Skill Reference Page Number:		
	3	77 of 77		
ATTACHMENT U	·			
Page 2 of 2 ODCM CONTROLS: ANNUAL RET	S REPORTS			
CONTROLS: ANNUAL RETS REPORT (continued)				
• The following information for each type of so report period:	olid waste shippe	d offsite during the		
 container volume total curie quantity (determined by measure principal radionuclides (determined by measure) 		-		
 type of waste (e.g., spent resin, compacted or bottoms) 	dry waste, evapor	rator		
 type of container (e.g., LSA, Type A, Type) solidification agent (e.g., cement) classification and other requirements specification 				
• An annual summary of hourly meteorological	-			
This annual summary may be either in the for speed, wind direction, atmospheric stability, magnetic tape, or in the form of joint frequen direction, and atmospheric stability.	and precipitation	(if measured) on		
• An assessment of the radiation doses due to t effluents released from the unit or station due		-		
• An assessment of the radiation doses from ra THE PUBLIC due to their activities inside th Figure 5.1 and 1/2-ODC-2.02 Figure 5-1 dur used in making these assessments (e.g., speci shall be included in these reports. The assess performed in accordance with 1/2-ODC-2.04	te site boundary a ing the report per ific activity, expo sment of radiatio	see 1/2-ODC-2.01 riod. All assumptions osure time, and location		
 An assessment of radiation doses to the likel reactor releases for the previous calendar yea 190, Environmental Radiation Protection Sta Acceptable methods for calculating the dose effluents are given in Regulatory Guide 1.10 (available from Radiation Shielding Informa calculating the dose contribution from direct 	ar to show confor andards For Nucl contribution from 9, Revision 1. T ation Center, (OR	mance with 40 CFR ear Power Operation. m liquid and gaseous he SKYSHINE Code NL)) is acceptable for		
• If quantities of radioactive materials released significantly above design objectives, the rep				

•

)r

)