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1.0 Purpose

In support of the Early Site Permit (ESP) Application for Victoria County Station, determine the following from the normal operation of the proposed new units:

- Activity concentrations in water and air from liquid and gaseous effluents
- Doses to members of the public
- Doses to construction workers during the period that at least one unit is operating and another unit is under construction

The following six reactor technologies are being considered for the ESP:

- AP1000 two units
- APWR two units
- GEH ABWR two units
- Toshiba ABWR two units
- ESBWR two units
- mPower 12 units

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2.0 References

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4.0 Assumptions

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6.0 Results & Conclusions

The activity concentrations in water are shown in Table 5-8. The activity concentrations in air are shown in Table 5-9. Both the water and air concentrations meet the acceptance criteria of 10 CFR 20, Appendix B.

Doses are shown in the following tables. Doses to the maximally exposed individual (MEI) and construction workers meet the applicable acceptance criteria in 10 CFR 20, 10 CFR 50, Appendix I, and 40 CFR 190.

Receptor	Source	Table
MEI	Liquid Effluents	Table 6-1
	Gaseous Effluents	Table 6-4
	All	Table 6-8, Table 6-9 – Compliance with regulations
Population	Liquid Effluents	Table 6-2
	Gaseous Effluents	Table 6-5
	All	Table 6-10
Biota	Liquid Effluents	Table 6-3
	Gaseous Effluents	Table 6-6
	All	Table 6-11
Construction	Gaseous Effluents	Table 6-12
Worker	All	Table 6-13 – All pathways
		Table 6-14, Table 6-15, Table 6-16, Table 6-17 – Compliance with regulations

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Calc No. 25352-000-M0C-HARA-00003 Subject Radiological Impacts of Normal Operation for ESP Sheet No. A-1 By S. Jha Date 6/8/11 Sheet Rev. 004 Attachment A: Microcomputer and Software Testing Report	BECHTEL	CALCULATION SHEET	Project	Victoria County Station
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BECHTEL	CALCULATION SHEET	Job No.	25352
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Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-39
By	S. Jha Date 11/25/09	Sheet Rev.	000
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		Project	Victoria County Station
BECH	CALCULATION SHEET	Job No.	25352
		Calc No.	25352-000-M0C-HARA-00003
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-40
Ву	S. Jha Date 11/25/09	Sheet Rev.	000
	[Proprietary Informa	ition Delet	ted]

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		Project	Victoria County Station
BECHILL	CALCULATION SHEET	Job No.	25352
		Calc No.	25352-000-M0C-HARA-00003
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-41
Ву	S. Jha Date 11/25/09	Sheet Rev.	000
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CHIEL	CALCULATION SHEET	Project	Victoria County Station	
		Job No.	25352	
		Calc No.	25352-000-M0C-HARA-00003	
ubject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-42	
y	S. Jha Date 11/25/09	Sheet Rev.	000	
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		Project	Victoria County Station
BECHILL	CALCULATION SHEET	Job No.	25352
		Calc No.	25352-000-M0C-HARA-00003
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-43
Ву	S. Jha Date11/25/09	Sheet Rev.	000
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BELIN	CALCULATION SHEET	Job No.	25352	
		Calc No.	25352-000-M0C-HARA-00003	
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-44	
Зу	S. Jha Date 11/25/09	Sheet Rev.	000	
Зу	<u>S. Jha</u> <u>Date</u> <u>11/25/09</u>			

		Project	Victoria County Station
BECHTEL	CALCULATION SHEET	Job No.	25352
		Calc No.	25352-000-M0C-HARA-00003
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-45
By	S. Jha Date 11/25/09	Sheet Rev.	000
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		Project	Victoria County Station
BECHLES	CALCULATION SHEET	Job No.	25352
		Calc No.	25352-000-M0C-HARA-00003
Subject	Radiological Impacts of Normal Operation for ESP	Sheet No.	C-50
Ву	S. Jha Date 11/25/09	Sheet Rev.	000
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	CALCULATION SHEET	Project	Victoria County Station	
		Job No.	25352	
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,	S. Jha Date 11/25/09	Sheet Rev.	000	
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Question#1.02-5 Affidavit

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NP-11-0026 Attachment 7B Page 1 of 4

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Question 11.02-5 Affidavit

(3 Pages)

10 CFR 2.390 AFFIDAVIT OF JOHN K. ATWELL SUPPORTING APPLICATION TO WITHHOLD FROM PUBLIC DISCLOSURE

BECHTEL CALCULATION 25352-000-M0C-HARA-00003, "RADIOLOGICAL IMPACTS OF NORMAL OPERATION FOR ESP, REVISION 4, Jun 3 9, 2011

I, John K. Atwell, Manager of Nuclear Operations, of Bechtel Power Corporation (Bechtel), having been duly sworn, do hereby affirm and state:

I have been authorized by Bechtel to (a) review the information owned by Bechtel which is referenced herein relating to supporting analyses for the Victoria County Station (VCS) Early Site Permit Application (ESPA) Site Safety Analysis Report (SSAR) which Bechtel seeks to have withheld from public disclosure pursuant to 10 CFR 2.390(a)(4), and (b) apply for the withholding of such information from public disclosure by the Nuclear Regulatory Commission (NRC) on behalf of Bechtel.

- 1. Pursuant to the provisions of 10 CFR 2.390(b)(3), the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - i. The information sought to be withheld from public disclosure is owned and has been held in confidence by Bechtel.
 - ii. The information is of a type customarily held in confidence by Bechtel and not customarily disclosed to the public. Bechtel has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Bechtel policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where presentation of its use by any of Bechtel's competitors without license from Bechtel constitutes a competitive economic advantage.
- b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).
- c) Its use by a competitor would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.

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- d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Bechtel, its customers, or suppliers.
- e) It reveals aspects of past, present, or future Bechtel or customer funded development plans and programs of potential commercial value to Bechtel.
- f) It contains patentable ideas, for which patent protection may be desirable.

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There are sound policy reasons behind the Bechtel system which include the following:

- a) The use of such information by Bechtel gives Bechtel a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Bechtel competitive position.
- b) It is information, which is marketable in many ways. The extent to which such information is available to competitors diminishes Bechtel's ability to sell products and services involving the use of the information.
- c) Use by our competitors would put Bechtel at a competitive disadvantage by reducing their expenditure of resources at Bechtel expense.
- d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Bechtel of a competitive advantage.
- e) Unrestricted disclosure would jeopardize the position of prominence of Bechtel in the world market, and thereby give a market advantage to the competition.
- f) The Bechtel capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- iii. The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR 2.390, it is to be received in confidence by the Commission.
- iv. The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- v. The proprietary information specifically sought to be withheld is Bechtel Calculation 25352-000-M0C-HARA-00003, "Radiological Impacts of Normal Operation for ESP," Revision 4, 6/9/11, which was prepared to support the evaluation of radiation doses due to liquid and gaseous effluents under normal operation as documented in the Victoria County Station ESPA SSAR Sections 11.2.3.2, "Liquid Pathway Doses," and 11.3.3.2, "Gaseous Pathway Doses."
- vi. This calculation was prepared by Bechtel to determine the following from the normal operation of the proposed new units: activity concentrations in water and air from liquid and gaseous effluents; doses to members of the public; and doses to construction workers during the period that at least one unit is operating and another unit is under

construction at Victoria County Station.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Bechtel because it would enhance the ability of competitors to perform similar calculations and related services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the information described in part is the result of applying the results of many analyst-hours and significant monetary expenditure.

In order for a competitor of Bechtel to duplicate this information, similar analyses would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further affiant sayeth not.

I, John K. Atwell, having been duly sworn, hereby confirms that I am the Manager of Nuclear Operations, of Bechtel Power Corporation, that I am authorized on behalf of Bechtel to review the information attached hereto and to sign and file with the Nuclear Regulatory Commission this affidavit and the attachments hereto, and that the statements made and matters set forth herein are true and correct to the best of my knowledge, information, and belief.

John Atwell

On this $\frac{9}{2}$ day of \underbrace{JUNE}_{E} 2011, the individual signing above personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument, and acknowledged that he executed the same for the purposes therein contained. In witness hereof I hereunto set my hand and official seal.

Notary Public

State of Maryland, Frederick County My commission expires IO/IO/I

RAI 11.03-2:

Question:

Please provide detailed information to enable the NRC staff to validate and verify the estimated gaseous effluent doses discussed in the applicant's ESP, Section 11.3.3.2. Gaseous Pathway Doses, with respect to the dose objectives of Appendix I to 10 CFR 50, and the dose limits in 10 CFR 20.1301(e).

The information should include the following:

- 1.) A complete description of how the applicant derived all the values, including all assumptions made;
- 2.) Citations to any reference material used (for documents not publicly available, please provide a copy at an audit location for the NRC staff's review).
- 3.) A detailed breakdown of individual doses and the maximally exposed individual (MEI) doses by pathway and organ; and
- 4.) A detailed breakdown of population doses by pathway and organ.
- 5.) Provide the basis for parameters and values used in the GASPAR code or equivalent calculation.
- 6.) Provide the GASPAR code input/output files used to calculate the gaseous effluent doses.

Response:

The calculation, "Radiological Impacts of Normal Operation for ESP," Calculation No. 25352-000-M0C-HARA-00003, Revision 004, includes an evaluation of gaseous effluent doses and was provided in response to RAI 11.02-5. This calculation provides the methodology, assumptions, references, and bases for GASPAR II inputs, as well as a breakdown of the resulting individual and population doses by pathway and organ. Calculation No. 25352-000-M0C-HARA-00003, entitled "Radiological Impacts of Normal Operation for ESP," contains proprietary intellectual information and is requested to be withheld from public disclosure, as described in the transmittal cover letter. Non-Proprietary and Proprietary versions are provided in Attachments 7 and 7A, respectively, in response to RAI 11.02-5.

The GASPAR II input and output files that are listed in the calculation are also being provided electronically on compact disc in Attachment 12.

Associated ESPA Revision:

No ESPA revision is required as a result of this response.

SUMMARY OF REGULATORY COMMITMENTS

(Exelon Letter to USNRC, NP-11-0026, dated June 23, 2011)

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

	COMMITTED	СОММІТМ	ENT TYPE
COMMITMENT	DATE	ONE-TIME ACTION (Yes/No)	Programmatic (Yes/No)
Exelon will revise the VCS ESPA SSAR Section 2.5.4 to incorporate the change shown in the enclosed response to the following NRC RAI: 02.05.04-1 (Attachment 1)	Revision 1 of the ESPA SSAR and ER planned for no later than March 31, 2012	Yes	No
Exelon will revise the VCS ESPA SSAR Section 2.5.4 to incorporate the change shown in the enclosed response to the following NRC RAI: 02.05.04-11 (Attachment 3)	Revision 1 of the ESPA SSAR and ER planned for no later than March 31, 2012	Yes	No
Exelon will revise the VCS ESPA SSAR Section 2.5.5 to incorporate the change shown in the enclosed response to the following NRC RAI: 02.05.05-5 (Attachment 4)	Revision 1 of the ESPA SSAR and ER planned for no later than March 31, 2012	Yes	No

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GASPAR I/O Files 25352-000-M0C-HARA-00003, Rev. 4

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10/19/2009 02:10 FM 4,705 Gas1.dat 10/29/2009 12:33 PM 166,459 Gas1.out 10/19/2009 02:11 PM 4,611 Gas2.dat 10/29/2009 12:34 PM 138,862 Gas2.out 10/29/2009 02:54 PM 4,419 Gas3.dat 10/29/2009 03:01 PM 90,770 Gas3.out 10/29/2009 12:08 PM 12,090 Gas_XOQ.dat

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