

December 15, 2011

Ms. Diane Curran
Harmon, Curran, Spielberg & Eisenberg, L.L.P.
1726 M Street NW, Suite 600
Washington, DC 20036

Mr. David Roth
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: Twenty-third Update to Disclosures Pursuant to 10 CFR § 2.336; *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), Docket No. 50-391-OL

Pursuant to 10 CFR § 2.336 and the agreement among the parties regarding mandatory discovery disclosures dated December 1, 2009, the Tennessee Valley Authority (TVA) is providing the twenty-third update to its mandatory disclosures with respect to Intervenor's Contention 7, as admitted by the Board on November 19, 2009 (LBP-09-26).

In order to compile the indices in Enclosures 2, 3, and 4, a search was conducted of documents in TVA's possession, custody, or control since the twenty-second update to disclosures dated November 15, 2011. Attached is a supporting affidavit. TVA's twenty-third disclosure update consists of the following:

- Enclosure 1 provides the names, addresses, and telephone numbers of the persons upon whose opinion TVA will base its positions on the contention and upon whom TVA may rely as a witness, and a copy of the analyses and authorities upon which they base their opinions.
- Enclosure 2 provides a description, by category and location, of non-privileged documents, data compilations, and tangible things in the possession, custody, or control of TVA that are relevant to the admitted contentions in this proceeding. If you determine that you would like a copy of any of these documents, please inform me of which documents you would like, and I will provide a copy to you.
- Enclosure 3 provides an index of documents, data compilations, or tangible things that may be relevant to the contentions but that contain proprietary information, Sensitive Unclassified Non-Safeguards Information (SUNSI), or otherwise protected information. Upon request by the NRC staff, TVA will provide a copy of any such material using the procedure in 10 CFR § 2.390. TVA will provide any requested proprietary documents to the Intervenor after the Board has entered a Protective Order and the Intervenor has signed and returned to TVA the Non-Disclosure Agreement.
- Enclosure 4 provides an index of relevant documents that are otherwise publicly available.

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In the event that TVA identifies additional relevant documents or the witnesses for any hearing on the contentions, TVA will update these disclosures periodically on the fifteenth day of each month as required by the December 1, 2009 mandatory disclosure agreement.

In order to compile these enclosures, TVA made a reasonable search of its records. We are attaching an affidavit which attests that all relevant materials identified by this search have been disclosed, and that the disclosures are accurate and complete as of December 15, 2011. Also, we have highlighted the additions to the logs since the last disclosures.

TVA has been conservative in identifying documents for inclusion in Enclosures 2, 3, and 4. By identifying documents on those Enclosures, TVA does not necessarily concede that the documents are in fact relevant or material to the admitted contentions. Also, in order to facilitate your review of these disclosures, we have made a good faith effort to identify the contention number(s) to which each record is responsive. These determinations, however, do not constitute an admission that each and every record is necessarily responsive to that contention(s), and documents may be responsive to additional contentions not identified.

Sincerely,

Signed (electronically) by

/s/ Christopher C. Chandler
Christopher C. Chandler
Office of the General Counsel
Tennessee Valley Authority
400 W. Summit Hill Drive, WT 6A-K
Knoxville, TN 37902-1401
Phone: (865) 632-7317
Fax: (865) 632-6147
E-mail: ccchandler0@tva.gov
Counsel for TVA

Attachments
cc: Service List

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of)))))
TENNESSEE VALLEY AUTHORITY)))))
(Watts Bar Nuclear Plant, Unit 2))))))

Docket No. 50-391
December 15, 2011

AFFIDAVIT

1. My name is Gordon Arent. My title is General Manager, New Generation Licensing, at the Tennessee Valley Authority (TVA). Working with the attorneys for TVA, I have been responsible for managing the searches, collection, and compilation of documents, data compilations, and tangible things to comply with the mandatory disclosure requirements in 10 CFR § 2.336.
2. This Affidavit relates to the twenty-third update to disclosures that TVA is providing on December 15, 2011, in the above-captioned proceeding pursuant to 10 CFR § 2.336 and the parties' joint agreement on mandatory disclosures, dated December 1, 2009.
3. A search was conducted of documents, data compilations, and tangible things under the custody and control of TVA since it filed its twenty-second update to the disclosures for the types of information specified in 10 CFR § 2.336(a). As provided in 10 CFR § 2.336(c), this search was conducted based on information and documents reasonably available to TVA:
 - a. The searches encompassed both electronic and paper documents.

- b. The searches encompassed both Watts Bar 2 project-related files and documents in the possession and control of individuals who have worked on the Watts Bar 2 project.
 - c. Searches did not encompass documents in the possession of individuals who did not work on the Watts Bar 2 project or files unrelated to the Watts Bar 2 project.
4. Enclosure 2 provides the index of relevant non-privileged, non-protected documents, data compilations, and tangible things that were located as a result of this search.
 5. Enclosure 3 provides the index of relevant documents, data compilations, and tangible things containing proprietary-related information.
 6. Enclosure 4 provides the index of relevant documents, data compilations, and tangible things that are publicly available.
 7. TVA has been conservative in identifying documents for inclusion in Enclosures 2, 3, and 4. By identifying documents on those Enclosures, TVA does not necessarily concede that the documents are in fact relevant or material to the admitted contentions.
 8. These disclosures are accurate and complete as of December 15, 2011.

The statements made above are true to the best of my knowledge, information, and belief.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Accord with 10 CFR § 2.304(d)

/s/ Gordon Arent

Gordon Arent

General Manager, New Generation Licensing

Tennessee Valley Authority

Chattanooga, TN 37402

Phone: 423-751-2233

E-mail: garent@tva.gov

Executed this 15th day of December 2011

ENCLOSURE 1

TVA WITNESSES

The name and, if known, the address and telephone number of any person, including any expert, upon whose opinion the party bases its claims and contentions and may rely upon as a witness:

Response:

TVA may rely on the following witnesses in support of its position:

Dr. Charles C. Coutant
120 Miramar Circle
Oak Ridge, Tennessee 37830

Dennis S. Baxter
Tennessee Valley Authority
400 W. Summit Hill Drive, WT 11C-K
Knoxville, Tennessee 37904
(865) 632-6404

John T. Baxter
Tennessee Valley Authority
400 W. Summit Hill Drive, WT 11B-K
Knoxville, Tennessee 37904
(865) 632-3360

Dr. Paul N. Hopping
Tennessee Valley Authority
400 W. Summit Hill Drive, WT 10B-K
Knoxville, Tennessee 37904
(865) 632-2881

A copy of the analysis or other authority upon which that person bases his or her opinion:

Response:

Currently, TVA bases its position on the following sections of the Watts Bar FSEIS and the references cited therein:

- Contention 7 (Aquatic Impacts) - - FSEIS chs. 2.2, 2.4, 3.1, 3.2, tbls. 1-1, 2-1, and references cited therein.

The Watts Bar Unit 2 FSEIS is publicly available at <http://www.nrc.gov/reactors/plant-specific-items/watts-bar/key-correspondence.html>.

TVA will update this disclosure when it has identified the persons that it may use as witnesses and the analyses and authorities upon which they base their opinions.

ENCLOSURE 2

Mandatory Disclosure Log

DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
1	Jan 2001	TVA	TVA	N/A	Watts Bar Nuclear Plant Supplemental Condenser Cooling Water System Fish Monitoring Program Final Report	7
2	May 2009	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2008	7
3	May 2008	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2007	7
4	May 2007	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2006	7
5	May 2006	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2005	7
6	June 2005	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2004	7
7	June 2004	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2003	7
8	June 2003	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2002	7
9	Sept 1994	TVA	TVA	N/A	Summary of Preoperational Monitoring of the Mussel Fauna in Upper Chickamauga Reservoir in the Vicinity of the Watts Bar Nuclear Plant, 1983-1993	7
10	Sept 1993	TVA	TVA	N/A	The Effects of Aquatic Macrophytes on Fish Populations of Chickamauga Reservoir Coves, 1970-90	7
11	May 1989	TVA	TVA	N/A	Update of the Watts Bar Nuclear Plant Preoperational Monitoring of the Mussel Fauna in Upper Chickamauga Reservoir	7
12	Apr 1980	TVA	TVA	N/A	Watts Bar Nuclear Plant Preoperational Aquatic Monitoring Report, 1973-1977	7

* TVA is located at 400 W. Summit Hill Drive, Knoxville, TN 37902.

** This document was originally disclosed in TVA's fifth disclosure update (June 15, 2010) as document number 103. TVA has discovered that the document was inadvertently omitted from subsequent disclosure filings, and is reinserting it as document number 103a.

DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
13	Mar 1980	TVA	TVA	N/A	Watts Bar Nuclear Plant Preoperational Aquatic Monitoring Report, 1977-1979	7
14	Dec 1997	TVA	TVA	N/A	Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Project Thermal Plume Modeling	7
15	Apr 1997	TVA	Tennessee Technological University Center for the Management, Utilization and Protection of Water Resources	N/A	Watts Bar Tailwater Fishery Creel Survey, April 1996 through March 1997, Interim Report	7
16	June 2002	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, 2001	7
17	Oct 1990	TVA	TVA	N/A	Status of the White Crappie Population in Chickamauga Reservoir Final Project Report	7
18	Aug 1991	TVA	TVA	N/A	Status of the Channel Catfish Population in Chickamauga Reservoir First Year Progress Report	7
19	May 1992	TVA	TVA	N/A	Recommendation and Implementation of Special Seasonal Flow Releases to Enhance Sauger Spawning in Watts Bar Tailwater	7
20	Dec 1986	TVA	TVA	N/A	Preoperational Assessment of Water Quality and Biological Resources of Chickamauga Reservoir, Watts Bar Nuclear Plant, 1973-1985	7
21	Dec 1986	TVA	TVA	N/A	Preoperational Assessment of Water Quality and Biological Resources of Chickamauga Reservoir, Watts Bar Nuclear Plant, 1973-1985, Appendices	7
22	Aug 1991	TVA	TVA	N/A	Population Survey of Sauger in Chickamauga Reservoir, 1990-1991	7
23	Aug 1990	TVA	TVA	N/A	Population Survey of Sauger (<u>Stizostedion canadense</u>) in Chickamauga Reservoir, 1989	7
24	Apr 1992	TVA	TVA	N/A	Fish Community Assessment of Selected Chickamauga Reservoir Embayments	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
25	Sept 1976	TVA	TVA	N/A	Estimates of Entrainment of Fish Eggs and Larvae By Watts Bar Steam Plant, 1975, and Assessment of the Impact of the Fisheries Resources of Watts Bar Reservoir	7
26	Nov 1976	TVA	TVA	N/A	Environmental Information, Watts Bar Nuclear Plant Units 1 and 2	7
27	1996	TVA	TVA	N/A	Chickamauga Reservoir Sauger Investigation, 1993-1995, Final Project Report	7
28	Sept 1994	TVA	TVA	N/A	Chickamauga White Bass Study, 1990-1992, Final Project Report	7
29	Feb 2000	TVA	TVA	N/A	Chickamauga Reservoir Fisheries Monitoring, 1999 Cove Rotenone Results	7
30	June 2000	TVA	TVA	N/A	Chickamauga Reservoir Fisheries Monitoring, 1999 Cove Rotenone Results	7
31	May 1996	TVA	TVA	N/A	Chickamauga Reservoir 1995 Fisheries Monitoring Cove Rotenone Results	7
32	June 1992	TVA	TVA	N/A	Chickamauga Reservoir 1991 Fisheries Monitoring Cove Rotenone Results	7
33	June 1991	TVA	TVA	N/A	Chickamauga Reservoir 1990 Fisheries Monitoring Cove Rotenone Results	7
34	June 1990	TVA	TVA.	N/A	Chickamauga Reservoir 1989 Fisheries Monitoring Cove Rotenone Results	7
35	June 1989	TVA	TVA	N/A	Chickamauga Reservoir 1988 Fisheries Monitoring Cove Rotenone Results	7
36	June 1997	TVA	TVA	N/A	Aquatic Environmental Conditions in the Vicinity of Watts Bar Nuclear Plant During the First Year of Operation, 1996	7
37	June 1998	TVA	TVA	N/A	Aquatic Environmental Conditions in the Vicinity of Watts Bar Nuclear Plant During Two Years of Operation, 1996-1997	7
38	Aug 1999	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs – 1998	7
39	Sept 2001	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs – 2000	7
40	Apr 1995	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs – 1994	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
41	Mar 1991	TVA	TVA	N/A	1990 Preoperational Monitoring of the Mussel Fauna in Upper Chickamauga Reservoir in the Vicinity of the Watts Bar Nuclear Plant	7
42	Feb 2002	TVA	TVA	N/A	Watts Bar Native Mussel Enhancement Project: Preliminary Evaluation of an Artificial Boulder Field for Enhancing Native Mussel Habitat in the Watts Bar Tailwater, Tennessee River Mile 528.5	7
43	July 1992	TVA	TVA	N/A	Reservoir Monitoring-1991 Summary of Vital Signs and Use Impairment Monitoring on Tennessee Valley Reservoirs	7
44	July 1981	TVA	TVA	N/A	Final Environmental Impact Statement: Watts Bar Waste Heat Park, Rhea County, Tennessee, Volume I	7
45	July 1981	TVA	TVA	N/A	Final Environmental Impact Statement: Watts Bar Waste Heat Park, Rhea County, Tennessee, Volume II	7
46	Feb 1977	TVA	TVA	N/A	Effects of Watts Bar Nuclear Plant and Watts Bar Steam Plant Discharges on Chickamauga Lake Water Temperatures	7
47	May 1977	TVA	TVA	N/A	Results of Hydrothermal Model Tests of the Multiport Diffuser System Watts Bar Nuclear Plant	7
48	Dec 1993	TVA	TVA	N/A	Discharge Temperature Limit Evaluation for Watts Bar Nuclear Plant	7
49	May 1994	TVA	TVA	N/A	Tennessee Valley Reservoir and Stream Quality – 1993 Summary of Vital Signs and Use Suitability Monitoring Volume I	7
50	May 1994	TVA	TVA	N/A	Tennessee Valley Reservoir and Stream Quality – 1993 Summary of Vital Signs and Use Suitability Monitoring Volume II	7
51	Nov 1998	TVA	TVA	N/A	Hydrodynamics and Water Temperature Modeling at Watts Bar SCCW Discharge Structure	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
52	Oct 2004	TVA	TVA	N/A	Proposed Modifications to Water Temperature Effluent Requirements for Watts Bar Nuclear Plant Outfall 113	7
53	May 1980	TVA	Oak Ridge National Laboratory (ORNL)	NRC	Threadfin Shad Impingement: Effect of Cold Stress	7
54	11/12/2008	TVA	GE Water & Process Technologies/TVA	TVA	Water Analysis Report for 30 Oct 2008	7
55	May 2004	TVA	TVA	N/A	1997 Verification Studies of Thermal Discharge for Watts Bar Nuclear Plant	7
56	2/9/2007	TVA	Dynamic Solutions, LLC/TVA	N/A	RFP 103006 Report Rev1 Watts Bar Unit 2 Thermal Effluent Study	7
57	Sept 2001	TVA	TVA	N/A	Hydrothermal Data for Watts Bar Nuclear Plant SCCW Outfall	7
58	Nov 1999	TVA	TVA	N/A	July 1999 Verification Study of Thermal Discharge for Watts Bar Nuclear Plant Supplemental Condenser Cooling Water System	7
59	Feb 2006	TVA	TVA	N/A	Summer 2005 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
60	Jan 2007	TVA	TVA	N/A	Summer 2006 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
61	Oct 2005	TVA	TVA	N/A	Winter 2005 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
62	Jan 2007	TVA	TVA	N/A	Winter 2006 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
63	Sept 2000	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1999	7
64	Sept 2000	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1999 Appendices	7
65	April 1998	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1997 Sections 1 through 3	7
66	April 1998	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1997 Sections 4 through 6	7
67	April 1998	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1997 Appendices	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
68	Jan 1988	TVA	TVA	N/A	Results of Plankton Studies Conducted in 1986 and 1987 as Part of the Operational Aquatic Monitoring Program at Sequoyah Nuclear Plant, Chickamauga Reservoir	7
69	1991	TVA	TVA	N/A	Reservoir Monitoring Fiscal Year 1991 Workplan	7
70	11/15/2006	TVA	TVA/R. Horton	J. Chardos	Email discussing follow-up mussel habitat survey	7
71	10/12/2006	TVA	TVA/S. Chance	R. Horton	Email addressing status of mussels and potential for follow-up mussel survey	7
72	6/1/2007	TVA	TVA/D. Wade	R. Sherrad, J. Wright, H. Rucker	Email discussing ammonia toxicity and mussel studies	7
73	6/1/2007	TVA	TVA/R. Horton	N/A	Notes on Permitting Meeting with Tennessee Department of Environment and Conservation (TDEC)	7
74	Jan 2007	TVA	TVA/P. Hopping	N/A	Diagram depicting summer and winter mode operating of Watts Bar SCCW	7
75	5/25/2007	TVA	TVA/ S. Chance	J. Chardos, B. Yeager, R. Horton	Email discussing potential endangered species mitigation measures	7
76	May 2007	TVA	TVA	N/A	List of possible endangered species mitigation measures	7
77	1/19/2007	TVA	TVA/R. Horton	J. Phillips	Email discussing compilation of required permits list for Watts Bar Unit 2	1
78	12/20/2006	TVA	TVA/R. Horton	D. Pittman, J. Phillips	Email forwarding draft Bellefonte permit table to serve as a guide for use in preparing updated Watts Bar application	1
79	Nov 2006	TVA	Enercon/D. Luchsinger	N/A	Draft table of permits required for Bellefonte COL application	1
80	1/23/2007	TVA	TVA/R. Horton	J. Phillips	Email discussion concerning inclusion of Watts Bar construction permit and operating license in list of required permits	1
81	5/31/2007	TVA	TVA/P. Hopping	R. Horton	Email discussing design bases for Outfall 101 and 113 discharges	7
82	2/13/2008	TVA	TVA/D. Hutchison	TDEC	Watts Bar Nuclear Plant NPDES Water Withdrawal Registration Form for Calendar Year 2007 and Revised Registration Form for Calendar Year 2006	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
83	Sept 2009	TVA	TVA	N/A	Comparison of Fish Species Occurrence and Trends in Reservoir Fish Assemblage Index Results in Chickamauga Reservoir before and after Watts Bar Nuclear Plant Unit 1 Operation	7
84	Dec 1995	TVA	TVA	N/A	Effects of Thermal Effluent From Sequoyah Nuclear Plant on Fish Populations in Chickamauga Reservoir	7
85	Dec 2009	TVA	TVA	N/A	Figures showing sampling locations in Watts Bar and Chickamauga Reservoirs	7
86	Nov 2003	TVA	TVA	N/A	Intake Temperature Prediction at Kingston Fossil Power Plant	7
87	4/25/2007	TVA	TVA/R. Horton	B. Eiford-Lee, D. Pittman, et al.	Email summarizing meeting between TVA and TDEC to discuss Biocide/Corrosion Treatment Plant modifications and NPDES permit renewal	7
88	2/20/2004	TVA	TVA	N/A	Categorical Exclusion Checklist, Increase in Allowable UHS Temperature to 88°F	7
89	1999	TVA	T.A. McDonough, G.D. Hickman	N/A	Chapter 20: Reservoir Fish Assemblage Index Development: A Tool for Assessing Ecological Health in Tennessee Valley Authority Impoundments, in <u>Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities</u>	7
90	12/23/2009	TVA	TVA	NRC	Watts Bar Nuclear Plant Unit 2 – Additional Information Regarding Environmental Review (TAC No. MD8203)	7
91	4/9/2010	TVA	TVA	NRC	Watts Bar Nuclear Plant Unit 2 – Response to U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information Regarding Environmental Review (TAC No. MD8203)	1, 7
92	4/9/2010	TVA	TVA	NRC	Attachment 2 to April 9, 2010 RAI response: G-5 Permit Table	1
93	1976	TVA	TVA	N/A	Attachment 17 to April 9, 2010 RAI response: TVA 1976, Impingement at Watts Bar Steam Plant	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
94	2000	TVA	G.D. Hickman	N/A	<i>Sport Fishing Index (SFI): A method to quantify sport fishing quality</i> , in Environmental Science & Policy 3, S177-S125.	7
95	1980	TVA	TVA/R.W. Schneider and J.D. Tuberville	N/A	Kingston Steam Plant 316 Permit Renewal Report	7
96	2007	TVA	TVA	N/A	Fish Impingement at Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Intake Structure During 2005 Through 2007	7
97	2010	TVA	TVA	N/A	WBN Summary Work Plan for Preoperational and Operational Monitoring	7
98	5/12/2010	TVA	TVA	NRC	Watts Bar Nuclear Plant Unit 2 – Response to U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information Regarding Environmental Review (TAC No. MD8203)	7
99	May 2010	TVA	TVA	N/A	Summary of Hydrothermal Sampling for WBN SCCW Field Tests	7
100	6/7/2010	TVA	TVA	N/A	Aquatic Environmental Conditions in the Vicinity of Watts Bar Nuclear Plant During Two Years of Operation, 1996-1997, Revised 6/7/2010	7
101	4/26/2010	TVA	TVA	N/A	Watts Bar Nuclear Plant Process Sampling for NPDES Permit Unit 2 Modification Request (Permit No. TN 0020168)	7
102	5/24/2010	TVA	TVA/J. Phillips	S. Howard	Email summarizing observation of hydrothermal sampling at Watts Bar Nuclear Plant	7
103	June 2010	TVA	TVA	N/A	Comparison of Fish Species Occurrence and Trends in Reservoir Fish Assemblage Index Results in Chickamauga Reservoir before and after Watts Bar Nuclear Plant Unit 1 Operation Revised June 2010	7
103a**	6/4/10	TVA	TDEC	TVA	NPDES Permit No. TN 0020168 for Watts Bar Nuclear Plant (Unit 1)	7
104	2/16/2010	TVA	TVA	TDEC	WBN Unit 2 Condenser Cooling Water System Test Flush	7
105	6/14/2010	TVA	TVA	TDEC	WBN Unit 2 Flushes and Hydrostatic Testing Schedule	7
106	6/29/10	TVA	TVA	TDEC	WBN General Permit for Discharges of Hydrostatic Test Water – Notice of Intent	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
107	August 2010	TVA	TVA	N/A	Summary of Hydrothermal Sampling for WBN SCCW Field Tests	7
108	8/17/2010	TVA	TVA	TDEC	Tennessee Valley Authority (TVA) – Watts Bar Nuclear Plant (WBN) - NPDES Permit No. TN0020168 - Permit Modification Request – Addition of Unit 2 Operation	7
109	9/30/2010	TVA	TVA/J. Baxter	TDEC	Email notifying TDEC of collection of pink mucket and sheepsnose in Watts Bar tailwater	7
110	August 2010	TVA	TVA	N/A	Winter 2010 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
111	9/14/2010	TVA	TVA	N/A	Mollusk and Habitat Survey of Four Sites in the Tennessee River Near TVA's Watts Bar Nuclear Plant (Rhea and Meigs Counties, TN)	7
112	7/21/2010	TVA	TVA	N/A	TVA New Generation Development and Construction Newsletter – Excerpts from January and July 2010 Describing Aquatic Reports	7
113	October 2010	TVA	TVA	N/A	Analysis of Fish Species Occurrences in Chickamauga Reservoir - A Comparison of Historical and Recent Data	7
114	11/24/2010	TVA	TVA	N/A	Mollusk Survey of the Tennessee River Near Watts Bar Nuclear Plant (Rhea County, Tennessee)	7
115	12/10/2010	TVA	TVA	N/A	NPG Calculation Number EPMRCP052992, Sizing of Traveling Water Screen	7
116	1/6/2011	TVA	TVA/L. Johnson	TDEC	Tennessee Valley Authority (TVA) – Watts Bar Nuclear Plant (WBN) - NPDES Permit No. TN0020168 - Permit Modification Request – Antidegradation Review	7
117	February 2011	TVA	TVA	N/A	Hydrothermal Effects on the Ichthyoplankton from the Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Outfall in Upper Chickamauga Reservoir	7

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DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
118	February 2011	TVA	TVA	N/A	Hydrothermal Effects on the Ichthyoplankton from the Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Outfall in Upper Chickamauga Reservoir - Appendix A	7
119	March 2011	TVA	TVA	N/A	Discussion of the results of the 2010 Mollusk Survey of the Tennessee River Near Watts Bar Nuclear Plant (Rhea County, Tennessee)	7
120	April 2011	TVA	TVA	N/A	Comparison of 2010 Peak Spawning Seasonal Densities of Ichthyoplankton at Watts Bar Nuclear Plant at Tennessee River Mile 528 with Historical Densities during 1996 and 1997	7
121	March 2011	TVA	TVA	N/A	Fish Impingement at Watts Bar Nuclear Plant Intake Pumping Station Cooling Water Intake Structure during March 2010 through March 2011	7
122	March 2011	TVA	TVA	N/A	Revised Figures for Discussion of the results of the 2010 Mollusk Survey of the Tennessee River Near Watts Bar Nuclear Plant (Rhea County, Tennessee)	7
123	February 2011	TVA	TVA	N/A	Summer 2010 Compliance Survey for Watts Bar Nuclear Plant Outfall 113 Passive Mixing Zone	7
124	May 2010	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, Autumn 2009	7
125	1996	TVA	G.D. Hickman, T.A. McDonough	N/A	Assessing the Reservoir Fish Assemblage Index: A potential measure of reservoir quality, in <u>Reservoir symposium- Multidimensional approaches to reservoir fisheries management</u> American Fisheries Society Symposium 16:85-97	7
126	April 1994	TVA	TVA	N/A	Tennessee Valley Reservoir and Stream Quality - 1993 - Summary of Reservoir Fish Assemblage Results	7

* TVA is located at 400 W. Summit Hill Drive, Knoxville, TN 37902.

** This document was originally disclosed in TVA's fifth disclosure update (June 15, 2010) as document number 103. TVA has discovered that the document was inadvertently omitted from subsequent disclosure filings, and is reinserting it as document number 103a.

DOC #	DATE	LOCATION*	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
127	August 1996	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1995	7
128	August 1997	TVA	TVA	N/A	Aquatic Ecological Health Determinations for TVA Reservoirs - 1996	7
129	April 2011	TVA	TVA	N/A	Fish Impingement at Watts Bar Nuclear Plant Intake Pumping Station Cooling Water Intake Structure during March 2010 through March 2011, Revised April 2011	7
130	4/11/2011	TVA	TVA	N/A	NPG Calculation Number EPMRCP052992, Sizing of Traveling Water Screen, Revision 2	7
131	5/16/11	TVA	TVA; Tennessee Wildlife Resources Agency; U.S. Dep't of the Interior; U.S. Army Corps of Engineers; TDEC; The Nature Conservancy	N/A	Memorandum of Understanding for a Cooperative Mollusk Management Strategy	7
132	June 2011	TVA	TVA	N/A	Biological Monitoring of the Tennessee River Near Watts Bar Nuclear Plant Discharge, Autumn 2010	7
133	July 2011	TVA	TDEC	TVA	NPDES Permit No. TN 0020168 for Watts Bar Nuclear Plant	7
134	November 2011	TVA	TVA	N/A	Revised Comparison of 2010 Peak Spawning Seasonal Densities of Ichthyoplankton at Watts Bar Nuclear Plant at Tennessee River Mile 528 with Historical Densities during 1996 and 1997	7
135	11/9/1972	TVA	TVA	Atomic Energy Commission	In the Matter of the Applications of Tennessee Valley Authority, Docket Nos. 50-390, 50-391	7
136	8/10/1999	TVA	TVA	NRC	Letter from P.L. Pace, TVA, to NRC, Watts Bar Nuclear Plant (WBN) - National Pollution Discharge Elimination System (NPDES) Permit Number TN0020168	7
137	10/11/2011	TVA	TDEC	TVA	Letter from V. Janjic, TDEC, to Travis Markum, TVA, NPDES Permit No. TN0020168	7

* TVA is located at 400 W. Summit Hill Drive, Knoxville, TN 37902.

** This document was originally disclosed in TVA's fifth disclosure update (June 15, 2010) as document number 103. TVA has discovered that the document was inadvertently omitted from subsequent disclosure filings, and is reinserting it as document number 103a.

ENCLOSURE 3**Proprietary Log**

DOC #	DATE	LOCATION*	AUTHOR/ CUSTODIAN	TO	SUBJECT/ DESCRIPTION	CONTENTION	BASIS FOR PROPRIETARY STATUS
1	Mar 2008	TVA	Electric Power Research Institute, ORNL	N/A	The Role of Temperature and Nutritional Status in Impingement of Clupeid Fish Species	7	EPRI Proprietary – Impingement Study
2	Oct 1986	TVA	Kenneth P. Cannon, University of Tennessee- Knoxville/TVA	N/A	An Assessment of the Archaeological Resources of the Watts Bar Reservoir, East Tennessee	7	16 USC § 470hh; 18 CFR § 1312.18

* TVA is located at 400 W. Summit Hill Drive, Knoxville, TN 37902.

ENCLOSURE 4

Publicly Available Log

DOC #	DATE	LOCATION	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
1	Nov 1972	Available at http://www.tva.gov/environment/reports/wattsbar2/related/nov_1972.pdf	TVA	N/A	Environmental Statement, Watts Bar Nuclear Plant Units 1 and 2	1, 7
2	Aug 1993	Available at http://www.tva.gov/environment/reports/wattsbar2/related/aug_1993.pdf	TVA	N/A	Environmental Impact Statement (EIS) Review Watts Bar Nuclear Plant	7
3	Feb 1995	Available at http://www.tva.gov/environment/reports/energyvision2020/index.htm	TVA	N/A	Energy Vision 2020 Integrated Resource Plan/Environmental Impact Statement	7
4	June 2007	Available at http://www.tva.gov/environment/reports/wattsbar2/appendix_d.pdf	TVA	N/A	FSEIS Appendix D: Response to Comments	7
5	Aug 1998	Available at http://www.tva.gov/environment/reports/wattsbar2/related/aug_1998.pdf	TVA	N/A	Final Environmental Assessment Related to the Watts Bar Nuclear Plant Supplemental Condenser Cooling Water Project	7
6	May 2004	Available at http://www.tva.gov/environment/reports/ros_eis/index.htm	TVA	N/A	Reservoir Operations Study Final Programmatic Environmental Impact Statement	7
7	5/14/1971	ADAMS Accession no. ML072990489	TVA	NRC	Letter from A. Wagner, TVA, to P. Morris, AEC, License Application - Watts Bar Nuclear Plant Units 1 and 2	7
8	Apr 2011	Available at http://www.nrc.gov/infofinder/reactor/wb/wattsbar/history.html	NRC	N/A	History of Watts Bar Unit 2 Reactivation	7
9	6/30/1976	ADAMS Accession No. ML073400595	TVA	NRC	Letter from T. Wells, Jr., TVA, to B. Rusche, NRC, In the Matter of the Application of [TVA]	7

DOC #	DATE	LOCATION	AUTHOR/CUSTODIAN	TO	SUBJECT/DESCRIPTION	CONTENTION
10	2/7/1996	ADAMS Accession No. ML073460319.	NRC	TVA	Notice of Issuance of Facility Operating License [Watts Bar Unit 1]	7
11	8/3/2007	ADAMS Accession No. ML072190047	TVA	NRC	Letter from W. McCollum, Jr., TVA, to NRC, Watts Bar Nuclear Plant (WB) – Unit 2 – Reactivation of Construction Activities	7
12	3/4/2009	ADAMS Accession No. ML090700378	TVA	NRC	Letter from M. Bajestani, TVA, to NRC, Watts Bar Nuclear Plant (WBN) Unit 2 – Operating License Application Update	7
13	2/15/2008	ADAMS Accession No. ML080510469	TVA	NRC	Letter from M. Bajestani, TVA, to NRC, Watts Bar Nuclear Plant (WBN) Unit 2 – Final Environmental Impact Statement for the Completion and Operation of Unit 2	7
14	2011	Available at http://www.tva.gov/environment/reports/nrp/index.htm	TVA	N/A	Final Environmental Impact Statement, TVA Natural Resource Plan	7
15	Aug 2008	Available at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1872/	NRC	N/A	NUREG-1872, Final Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant Site	7
16	May 1999	Available at http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf .	EPA	N/A	EPA-315-R-99-002, Consideration of Cumulative Impacts in EPA Review of NEPA Documents	7
17	2006	Available at http://water.epa.gov/lawsregs/lawguidance/cwa/316b/phase3/index.cfm	EPA	N/A	EPA-821-R-06-003, Technical Development Document for the Final Section 316(b) Phase III Rule	7

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of)	
)	
TENNESSEE VALLEY AUTHORITY)	Docket No. 50-391
)	
(Watts Bar Nuclear Plant, Unit 2))	December 15, 2011
)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the “Twenty-third Update to Disclosures Pursuant to 10 CFR § 2.336; *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 2), Docket No. 50-391-OL” and the “Affidavit of Gordon Arent” have been served on the following persons this 15th day of December, 2011, by Electronic Information Exchange:

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