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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
Entergy Nuclear Vermont Yankee, LLC)	Docket No. 50-271-LR
and Entergy Nuclear Operations, Inc.)	ASLBP No. 06-849-03-LR
)	
(Vermont Yankee Nuclear Power Station))	

**ENTERGY'S ANSWER IN OPPOSITION TO NEW ENGLAND COALITION, INC.'S
MOTION TO COMPEL AND FOR SUBPOENA**

Pursuant to 10 C.F.R. §§2.323(c) and (h), Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (hereinafter collectively referred to as "Entergy") hereby answer and oppose New England Coalition's ("NEC") "Motion to Compel and for Subpoena" dated April 11, 2008 ("Motion"). The Motion asks the Atomic Safety and Licensing Board ("Board") to direct Entergy to make the CHECWORKS code, "including the mathematical algorithm it uses, available for inspection by Dr. Joram Hopfenfeld, NEC's expert witness on NEC's Contention 4." Motion at 1.¹ For the reasons stated below, NEC's Motion must be denied.

¹ The Motion also requests that the Board issue a subpoena to the Electric Power Research Institute ("EPRI"), holder of the rights to the CHECWORKS code, for the production of the source code and its algorithm. Id. at 1. Entergy understands that EPRI is filing a separate response in opposition to the issuance of such a subpoena. Entergy believes the issuance of a subpoena to EPRI would be inappropriate. We discuss briefly herein the reasons why issuance of a subpoena is not warranted, but we defer to EPRI and its counsel in fully addressing the matter.

I. INTRODUCTION

The obligations of a party to an NRC licensing proceeding with respect to the discovery of documents and data compilations are set forth in 10 C.F.R. § 2.336(a)(2)(i). Under that rule, a party must produce “[a] copy ... of all documents and data compilations in the possession, custody, or control of the party that are relevant to the contentions” admitted for adjudication in the proceeding. Thus, for documents or data compilations to be discoverable they must meet two conditions: (a) they must be “in the possession, custody, or control” of a party, and (b) they must be “relevant to the contentions” admitted for adjudication. As demonstrated below, the CHECWORKS source code and its algorithm are not in Entergy’s possession, custody or control, thus Entergy is neither able nor required to produce them. In addition, the motion to compel is unjustifiably untimely and should be denied on that ground alone.

The request for a third-party subpoena should be denied because NEC has not demonstrated the reasonableness of its scope, as required by 10 C.F.R. § 2.319(b). For example, we understand that the CHECWORKS source code comprises many hundreds of thousands lines of logical and mathematical instructions. NEC has not explained why Dr. Hopenfeld needs to review such a massive software package to address the issues raised by NEC Contention 4, or why NEC is making this eleventh hour request just a few months before the scheduled hearing.

See discussion *infra*.

II. BACKGROUND

In its August 10, 2007 Memorandum and Order (Ruling on Motion for Summary Disposition of NEC Contention 4) (“Contention 4 Order”), the Board identified the two remaining areas of dispute between the parties with respect to NEC Contention 4 as: (1) Whether data collected under the current VY FAC program during three post-EPU refueling

outages scheduled prior to the expiration of the current VY license will be sufficient to benchmark CHECWORKS to VY post-EPU conditions; and (2) whether the current VY FAC program appropriately implements industry guidance, and will constitute an adequate aging management plan with respect to FAC. (Contention 4 Order, slip op. at 4).

Discovery with respect to NEC's admitted contentions, including NEC Contention 4, has been ongoing since October 2006.² At no point in the fourteen months between the initial disclosures and the end of 2007 has NEC noted Entergy's failure to provide the CHECWORKS source code or its mathematical algorithm, or requested that these be provided. It was only on December 20, 2007 that NEC, for the first time, asked for production of the entire source code for CHECWORKS. See Motion at 3 and Exhibit 1 thereto.

As an accommodation to NEC, and without conceding the relevance of NEC's request for production of a copy of the CHECWORKS source code, Entergy offered to provide NEC an informal briefing on how the CHECWORKS program works, including providing a sample run for a plant piping system using generic data in an effort to help Dr. Hopenfeld understand how the CHECWORKS program is used by the industry. See, Motion at 3 and Exhibit 1 thereto. In response, NEC stated that it did not consider Entergy's good faith effort "a fully sufficient production" of CHECWORKS. Id. The instant Motion followed.³

In support of its Motion, NEC only offers the conclusory assertion that the CHECWORKS code is relevant (Motion at 1) and speculates that Entergy's witness "must rely,

² See Entergy's Initial Disclosures, October 23, 2006.

³ When NEC's counsel announced NEC's intention to file a motion to compel discovery, Entergy withdrew its voluntary offer to provide a briefing on CHECWORKS to Dr. Hopenfeld. See Motion, Exhibit 1 at 1. To pursue such a briefing while NEC was arguing for the production of the CHECWORKS source code and mathematical algorithm would have been futile and could have resulted in potentially longer delays than those that NEC's Motion would in itself cause.

in part, on his knowledge of CHECWORKS and the algorithm it uses” as part of his testimony.
Id. at 2.

III. ARGUMENT

A. NEC’s Motion is Untimely

Both Dr. Hopenfeld and NEC’s counsel have repeatedly asserted that Dr. Hopenfeld is an expert on the subject of FAC and, indeed, it was on the basis of that representation that NEC Contention 4 was admitted into this proceeding. See, e.g., Declaration of Dr. Joram Hopenfeld (May 12, 2006) (Hopenfeld 1st Decl.), Appendix A and ¶¶ 21-27; Aug. 2, 2006 Hearing, Tr. 367-76, 399-405 (Tyler); Fifth Declaration of Dr. Joram Hopenfeld (July 16, 2007). Both Dr. Hopenfeld and NEC have known from Entergy’s first document production that the source code for CHECWORKS was not included in the disclosures. Being an expert on FAC and the workings of the CHECWORKS code,⁴ Dr. Hopenfeld and NEC could, and should, have identified very early on any need to review the actual source code and its algorithm. Accordingly, any request for their production and motion to compel should have been filed over a year ago. NEC’s Motion is therefore quite untimely, since a motion must be made no later than ten days after the occurrence or circumstance from which the motion arises. 10 C.F.R. § 2.323(a).

The untimeliness of NEC’s motion is magnified by its submittal on the eve of NEC’s deadline for filing testimony in this proceeding, which is due on April 28. Granting NEC’s

⁴ For example, Dr. Hopenfeld has opined that the CHECWORKS code (i.e., computer program) “is not a mechanistic code; it is an empirical code that must be updated continuously with plant-specific data.” Hopenfeld 1st Decl. ¶ 24. Dr. Hopenfeld has further stated that inspection results are used as inputs into the CHECWORKS computer program, but asserted that, because FAC modeling is non-mechanistic, FAC can only be predicted “as long as plant parameters (velocity, coolant chemistry, etc.) do not change drastically and the data has been collected for a long period of time.” Id.

motion could cause unwarranted hearing delays.⁵ The Board should not countenance such a result. In filing its Motion, NEC knew or should have known that the motion “would disrupt or delay the proceeding.” Entergy Nuclear Vermont Yankee, LLC & Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station), LBP-06-14, 63 N.R.C. 568, 581 (2006).

B. The Source Code for CHECWORKS and its Algorithm are not Within Entergy’s Possession, Custody, or Control

The provisions of 10 C.F.R. § 2.336(a)(2)(i) apply only to relevant documents that are in the “possession, custody, or control” of a party. As discussed in the enclosed Declaration of Scott Goodwin, Entergy does not have and never has had the CHECWORKS source code or its mathematical algorithm in its possession, custody or control. Affidavit of Scott Goodwin in Support of Entergy’s Answer in Opposition to New England Coalition, Inc.’s Motion to Compel and Subpoena (April 18, 2008) ¶ 4. All Entergy has is an executable application program into which the user enters data to produce results. Id. This is analogous to what a customer obtains when he buys a copy of Microsoft software – e.g., Excel or Word. Customers, like Entergy, never receive a copy of the actual source code that the software company has developed. Id.

Not only does Entergy not have actual possession of the CHECWORKS source code or its mathematical algorithm, Entergy also lacks authority to provide the source code, or any mathematical algorithm associated with CHECWORKS, to NEC. It is well-established, in construing the analogous language of Rule 34 of the Federal Rules of Civil Procedure, that control is defined as the legal right to obtain required documents on demand. See, e.g., Mercy Catholic Medical Ctr. v. Thompson, 380 F.3d 142, 160 (3d Cir. 2004). Entergy lacks that right.

⁵ Frankly, in light of the alleged expertise of Dr. Hopenfeld on the subject and his asserted familiarity with CHECWORKS, it is inexplicable that he waited until this very late stage in the proceeding to identify the need to review the CHECWORKS source code and its mathematical algorithm.

To the contrary, Section 5.02 of the Master Agreement between Entergy and EPRI (copy attached as Exhibit 1) states:

5.02 License Restrictions.

(A) Except as set forth herein, Member shall not, directly or indirectly, without EPRI's prior written consent: (i) disclose to or allow the use of EPRI Materials by any third party unless otherwise provided for herein; (ii) use any method to obtain the human readable computer program source code version of EPRI Materials through decompilation, reverse engineering or otherwise; (iii) use any EPRI Materials or EPRI Confidential Information to create materials which are substantially similar to EPRI Materials; (iv) remove or alter EPRI's proprietary rights, limitation of liability, restricted rights and other notices in EPRI Materials or copies thereof; (v) translate any EPRI reports or software into a foreign language; (vi) sublicense, encumber, time-share, rent, or lease the EPRI Materials; or (vii) use the EPRI Materials for third party consulting or commercial purposes.

Entergy has not received consent from EPRI to allow NEC to obtain or use any CHECWORKS-related applications licensed to Entergy. Entergy, therefore, does not have control over any CHECWORKS software and cannot provide it to NEC, even pursuant to the Nondisclosure Agreement signed by Dr. Hopenfled under the terms of the Protective Order issued by the Board in this proceeding.⁶ NEC does not contest this fact. See Motion at 1.⁷ For these reasons, NEC's motion to compel must be denied.

C. NEC does not show that the Scope of its Subpoena Request is Reasonable

While Entergy is unable to provide the CHECWORKS source code and algorithm because they are not in Entergy's possession, custody or control, Entergy expended considerable effort in obtaining EPRI's agreement to provide a briefing to NEC and Dr. Hopenfled to explain how the model works, but unfortunately NEC was unwilling to accept this compromise once offered. NEC never explains why the proposed briefing was insufficient, or why Dr. Hopenfled

⁶ Order (Protective Order Governing Non-Disclosure of Certain Documents Claimed to be Proprietary), January 12, 2007).

⁷ NEC cites a previous instance in which Entergy provided two proprietary EPRI documents to NEC in discovery. Motion at 2. Those documents, however, were produced with EPRI's consent, and in fact EPRI submitted an affidavit requesting that the two documents produced be protected from disclosure. See "Submittal of Affidavit of John P. Gaertner in Support of Continued Protection of Proprietary Documents" and "Nondisclosure Certification Pursuant to 10 C.F.R. § 2.390 – Affidavit of John P. Gaertner" (July 26, 2007).

needs to review the massive software package represented by the CHECWORKS source code in order to address this contention. Further, Dr. Hopenfeld has claimed on a number of occasions to be an expert on CHECWORKS and, indeed, the Board admitted the proposed contention on this basis. It is therefore unclear why (and surprising that) NEC and Dr. Hopenfeld now claim to need EPRI's proprietary source code and algorithm, and why such need arises just a few months before the scheduled hearing. Accordingly, NEC has not demonstrated the reasonableness of the scope of its third-party subpoena request, as required by 10 C.F.R. § 2.319(c).

Indeed, even NEC's discussion of the relevance of this information is tenuous at best. In the Contention 4 Order, the Board stated that the issues for adjudication with respect to the contention were only two:

- 1) Whether data collected under the current VYNPS FAC program during three post-EPU refueling outages scheduled prior to the expiration of the current VYNPS license will be sufficient to benchmark CHECWORKS to VYNPS post-EPU conditions; and
- 2) Whether the current VYNPS FAC program appropriately implements industry guidance, and will constitute an adequate aging management plan with respect to FAC.

Contention 4 Order at 4. Thus, the issues in this proceeding are narrow and go to the adequacy of the amount of input data required for CHECWORKS to produce accurate predictions for plant configurations, and not to the adequacy of the model.

NEC quotes the expected testimony of Dr. Jeffrey Horowitz on behalf of Entergy, wherein Dr. Horowitz will testify, inter alia, on "the methodology, assumptions and data used in performing CHECWORKS evaluations, describe the industry experience with FAC and the use of CHECWORKS, and will explain why the data accumulated on VY's operations at uprate levels by the time the period of extended operation begins will be sufficient to permit accurate FAC predictions." Motion at 2, quoting Entergy's Final List of Witnesses (March 6, 2008) at 5.

From that description, NEC makes the gratuitous claim that “[a]s the basis for his testimony, Dr. Horowitz must rely, in part, on his knowledge of CHECWORKS and the algorithm it uses, which he wrote.” *Id.* However, a person reasonably well versed in the application of CHECWORKS – as Dr. Horowitz is, and Dr. Hopfenfeld claims to be – could testify on all of the subjects of Dr. Horowitz's testimony with very little, if any, knowledge of the actual CHECWORKS algorithm and without making reference to it. NEC has done nothing to establish a relationship between the mathematical algorithm involved in the CHECWORKS code and the adequacy of benchmarking of CHECWORKS predictions.

IV. CONCLUSION

For the reasons set forth herein, the Motion should be denied.

Respectfully submitted,



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Dated: April 21, 2008

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

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(Vermont Yankee Nuclear Power Station))	

CERTIFICATE OF SERVICE

I hereby certify that copies of “Entergy’s Answer in Opposition to New England Coalition, Inc.’s Motion to Compel and for Subpoena” and Exhibit 1 thereto, and “Affidavit of Scott Goodwin” were served on the persons listed below by deposit in the U.S. Mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 21st day of April, 2008.

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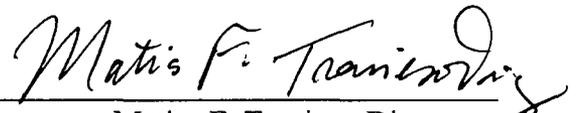
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Matias F. Travieso-Diaz

MASTER AGREEMENT FOR EPRI MEMBER PARTICIPATION

This Master Agreement for EPRI Participation ("Master Agreement") is entered into as of January 1, 2006 (the "Effective Date") between the Electric Power Research Institute, Inc., a nonprofit corporation organized under the laws of the District of Columbia ("EPRI"), with principal headquarters at 3420 Hillview Avenue, Palo Alto, California 94304, and Entergy Arkansas, Inc., Entergy Gulf States, Inc., Entergy Louisiana, LLC, Entergy New Orleans, Inc., Entergy Mississippi, Inc., Entergy Nuclear, Inc., Entergy Nuclear Generation Company, Entergy Nuclear Operations, Inc., Entergy Operations, Inc., Entergy Operations Services, Inc., Entergy Nuclear Vermont Yankee, LLC, Entergy Services, Inc., Entergy Nuclear Indian Point 2, LLC, Entergy Nuclear Indian Point 3, LLC, Entergy Nuclear Fitzpatrick, LLC, and TLG Services, Inc. (collectively, "Member," individually "Member Company").

Entergy Services, Inc., a Delaware corporation with offices at 639 Loyola Avenue, New Orleans, LA 70113 will serve as EPRI's contact company for this agreement.

EPRI and Member (collectively referred to as the "Parties") agree as follows:

RECITALS

WHEREAS, it is the intention of EPRI to utilize one Master Agreement for EPRI Member Participation to cover:

- (i) Participation in EPRI's Annual Research Portfolio, including any work offered by EPRI's taxable Affiliate, EPRI Solutions, Inc. ("ESI"),
- (ii) Participation in EPRI's Additional Project Opportunities, and
- (iii) The internal use license rights for the EPRI and/or ESI Materials.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants and agreements set forth below, the Parties agree as follows:

Article 1. Definitions

1.01 "Additional Project Opportunity(ies)" means a Project, Major Field Test or Demonstration (large scale, collaborative, multi-year project that focuses on the full scale testing of EPRI intellectual property to show its functionality and viability in real time), and Technology Transfer activities that are introduced outside of the Annual Research Portfolio.

1.02 "Affiliate(s)" means those entities who are (1) any corporation, company, partnership or other entity in the United States in which Entergy Corporation now or hereafter owns or controls, directly or indirectly, more than fifty percent (50%) of the ownership interest having the right to vote or appoint its directors or their functional equivalents ("Affiliated Company"), (2) any joint venture in which Entergy Corporation or an Affiliated Company owns fifty percent (50%) or more of the ownership interest, (3) any corporation, company, partnership or other entity that has an ownership interest, directly or indirectly, in any site controlled, operated or managed by an Affiliated Company, or joint venture as described in (2) immediately preceding, or (4) any successor in interest to (1) through (3) above. Member designates Affiliates to have use rights to the EPRI Materials pursuant to this Master Agreement, and any subsequent Research Portfolio Agreement and/or Project Opportunity Agreement.

1.03 "Annual Research Portfolio" means Programs, Project Sets or Projects that are included as part of EPRI's annual offering for collaborative research and development.

1.04 "Confidential Information" means information that is proprietary and/or confidential to the discloser, and shall include trade secrets.

1.05 "Deliverables" means the version of EPRI Materials to be delivered as described in each Research Portfolio Agreement, or each Project Opportunity Agreement.

1.06 "Derivative Works" means any form into which Deliverables may be recast, transformed or adapted including the modification, revision, condensation, translation, abridgment and/or expansion thereof.

1.07 "EPRI Intellectual Property Rights" means any patent, copyright, trademark, trade secret, know-how, or other intellectual property owned or licensed by EPRI.

1.08 "EPRI Materials" means all tangible and intangible results including data, reports, documentation, and machine readable and human readable software ("Object Code" and "Source Code" respectively; collectively "Software"), generated, developed, conceived, or first reduced to practice in any EPRI Program or Project, which is owned by EPRI and provided to Member from time to time under this Master Agreement, including without limitation Deliverables and EPRI Intellectual Property Rights. EPRI Materials shall not include what is described in this section to the extent that Member or any Affiliate participated or contributed in its development, the ownership of such contribution to remain with the applicable Member or Affiliate, provided that EPRI has not paid Member or Affiliate to create such a contribution. With respect to Member or Affiliate contribution, EPRI will have a non-exclusive, perpetual right to use such contribution (subject to the obligations of confidentiality below) for research.

1.09 "Funding or Funds" shall mean the Member's monetary support to be provided in support of the Annual Research Portfolio and/or Additional Project Opportunities.

1.10 "License" means the non-exclusive internal use license granted Member under Subarticle 5.01 of this Master Agreement.

1.11 "Member" means any funding entity that qualifies for membership under EPRI's By-Laws, purchases from the Annual Research Portfolio and elects to utilize the benefits of EPRI Membership. Members may also fund one or more Additional Project Opportunities and may participate in the Tailored Collaborations program.

1.12 "Member Companies" shall mean each of the following companies: Entergy Arkansas, Inc., Entergy Gulf States, Inc., Entergy Louisiana, LLC, Entergy New Orleans, Inc., Entergy Mississippi, Inc., Entergy Nuclear, Inc., Entergy Nuclear Generation Company, Entergy Nuclear Operations, Inc., Entergy Operations, Inc., Entergy Operations Services, Inc., Entergy Nuclear Vermont Yankee, LLC, Entergy Services, Inc., Entergy Nuclear Indian Point 2, LLC, Entergy Nuclear Indian Point 3, LLC, Entergy Nuclear Fitzpatrick, LLC, and TLG Services, Inc.

1.13 "Member TC Pool" shall have the meaning given to it in Section 2.05(a).

1.14 "Program" means a general segment of the Annual Research Portfolio.

1.15 "Project" means a more specific segment of the Annual Research Portfolio or Additional Project Opportunities.

1.16 "Project Opportunity Agreement" means the individual cost, scope, term and Deliverables agreed upon by the Parties for the conduct of an Additional Project Opportunity that Member will support with Funding.

1.17 "Research Portfolio Agreement" means the selected Programs and Projects from the Annual Research Portfolio that Member will support with Funding.

1.18 "Technology Innovation" the strategic long term research program conducted by EPRI (formerly known as SS&T).

1.19 "Technology Transfer" means the various forums used to inform and solicit feedback from Member on experiences in using EPRI technical information. Such forums include interest groups, training and workshops, and user groups.

1.20 "TC" or "TC Program" shall mean EPRI's Tailored Collaboration Program.

Article 2. Funding and Rights: Annual Research Portfolio

2.01 Funding. The Parties agree that for each year (or for multiple years committed at one time) a part of the Annual Research Portfolio is funded by Member, the Parties shall execute a separate Research Portfolio Agreement that incorporates the terms and conditions of this Master Agreement. A sample of the Research Portfolio Agreement is attached as Exhibit A strictly for illustrative purposes, which may periodically change to be consistent with EPRI policy. Each separate Research Portfolio Agreement shall specifically identify the selections made from the Annual Research Portfolio, the duration of such engagement, and the associated Funding for such period.

2.02 Member Affiliates' Participation. Any services provided by EPRI under this Agreement to one or more Member Companies shall be exclusively the obligation of Member Company that receives such services, and no other Member Company shall have any liability whatsoever in connection therewith. EPRI acknowledges that Member Companies are severally and not jointly liable to EPRI hereunder, and that each Member Company disclaims any financial responsibility, except with respect to those services that are furnished to such Member Company, even if they are invoiced through Entergy Services, Inc (or its successor). In cases of a Project performed on behalf of multiple Member Companies, it is further agreed that each such Member Company is severally and not jointly liable to EPRI.

2.03 Program Selection.

(A) Member will allocate its payment to the selections identified in the Research Portfolio Agreement, when and if Member submits a Research Portfolio Agreement. In the event Programs or Projects are selected from EPRI's taxable subsidiary, ESI, such participation shall be pursuant to the terms and conditions of this Master Agreement. No additional agreement will be required to memorialize such participation.

(B) Should a program or product designated by Member not go forth once EPRI receives its final selections from all of EPRI's members, Member shall have the option of allocating such payment to another program or product, or of securing a refund within 30 days of the decision by EPRI to cease such program or product.

2.04 Rights for Member. In consideration of Member's Funding in support of the Annual Research Portfolio, Member shall be entitled to the benefits listed below, consistent with EPRI's then current Bylaws:

(a) Governance rights, including voting rights (one vote for all the companies that make up "Member", not one vote for each of them) for the election of members of EPRI's Board of Directors by the Membership class to which Member belongs as further set out in EPRI's Bylaws, however, the inclusion of any participating Affiliates shall not increase or otherwise alter the voting rights to which Member would otherwise be entitled under the Bylaws;

(b) Access to and use by Member and its Affiliates, if any, of EPRI Materials from the Technology

Innovation program in accordance with the terms of this Master Agreement;

- (c) Participation in EPRI's TC Program;
- (d) The right to participate in EPRI's advisory structure; and
- (e) Access to and use by Member and its Affiliates, if any, of EPRI Materials from the selections made from the Annual Research Portfolio in accordance with the terms of this Master Agreement;

2.05 TC Program.

- (a) EPRI will provide access to Member of funds representing 25% of the dollar value of Member's Annual Research Portfolio Agreement ("Member's TC Pool"). So if the dollar value of Member's Annual Research Portfolio Agreement for 2006 is \$1,000,000, Member will receive the \$1,000,000-worth of research projects and any deliverables, and will have an additional \$250,000 amount available to it in the Member TC Pool for use in Additional Project Opportunities. The parties agree that not all programs are eligible to establish a TC Pool as specified in the Annual Research Portfolio price sheet.
- (b) When and if Member enters into a Project Opportunity Agreement with EPRI during that year or up until March 31 of the following year utilizing the TC Program, EPRI will match the new cash amount that Member provides, up to the amount in the Member TC Pool for that year. So, using the above example, if Member enters into a Project Opportunity Agreement with EPRI for a \$500,000 Project, before March 31, 2007, Member will provide \$250,000 of funding and EPRI will match the amount with \$250,000 from the Member TC Pool. If Member does not spend the funds by March 31 of the following year (i.e., by March 31, 2007 in the above example), then the amounts in the Member TC Pool for that year (2006 in the above example) will be deposited into the Technology Innovation Program, and no longer available to Member.
- (c) If, once the Additional Project Opportunity is completed, funds remain unspent, then EPRI will notify Member. Member has two options: (1) Member may reallocate both its half of the funding and the half from the Member TC Pool to another Project Opportunity Agreement, or (2) Member may receive a refund of its half and return the other half to the Member TC Pool. So in the above example, if \$10,000 in funds remain unspent at the completion of the Additional Project Opportunity, Member may (1) reallocate both its \$5,000 portion and the Member TC Pool portion to another Project Opportunity Agreement, or (2) Member may receive a refund of its \$5,000 portion while the remaining \$5,000 will be placed back into the Member TC Pool. Except as provided in Section 2.05(d), Member will not have access to the unused funds in the Member TC Pool after March 31 of the following year (i.e., after March 31, 2007 in the above example).
- (d) If such notification of unspent funds is made after March 31 of the following year (i.e., after March 31, 2007 in the above example), Member will have 30 days from such notification either to (1) reallocate both its \$5,000 portion and the Member TC Pool portion to another Project Opportunity Agreement, or (2) Member may receive a refund of its \$5,000 portion while the remaining \$5,000 will be allocated to the Technology Innovation Program, and will not be available to Member for use in Additional Project Opportunities.

Article 3. Funding and Rights: Additional Project Opportunities

3.01 Scope. When and if a Member Company or Member Companies desire EPRI to perform work that falls outside the Annual Research Portfolio the Parties may enter into a Project Opportunity Agreement. The Parties agree that each time an Additional Project Opportunity is funded by Member, the specific scope

of work, term, and Funding for each Project shall be recorded and executed in a separate Project Opportunity Agreement that incorporates the terms and conditions of this Master Agreement. A sample of a Project Opportunity Agreement is attached as Exhibit B strictly for illustrative purposes, which may periodically change to be consistent with EPRI policy. A Member who funds Projects pursuant to such Project Opportunity Agreement shall be entitled to participate in the relevant project management team(s) and to receive access to and use of the relevant EPRI Materials pursuant to the license granted herein. In the event an Additional Project Opportunity is funded via the TC Program, the Parties agree such work must be consistent with EPRI's then current TC Program rules.

3.02 Commencement of Work. EPRI shall not commence work unless duly authorized representatives from both Parties have signed a Project Opportunity Agreement.

Article 4. Participation in ESI: Annual Research Portfolio

(a) If Member has selected products and/or a service offered by ESI identified in the Annual Research Portfolio or Additional Project Opportunities (unless otherwise provided in an Additional Project Opportunity or other agreement with ESI), then the provisions of this Master Agreement shall apply to ESI, and ESI shall become a party to the subsequent Research Portfolio Agreement.

(b) Member will allocate its payment to ESI for the ESI project(s) designated on each Research Portfolio Agreement, when and if Member submits a Research Portfolio Agreement. Member understands that it shall not be entitled to EPRI membership in the event all of its designated products and/or services are those of ESI, and no qualifying EPRI Program is selected. ESI is not a membership organization; therefore, any membership benefit conferred by the terms of this Master Agreement for EPRI membership shall not apply to Member's relationship with ESI.

(c) To the extent a product and/or service is selected from ESI, ESI will use commercially reasonable efforts to perform and manage (or caused to be performed by outside contractors) all research and other activities associated with such product and/or service and to deliver results for the benefit of Member. Member understands that the conduct of research is inherently uncertain. Accordingly, ESI will not guarantee or warrant the outcome of such products and/or services or their results to Member. Member understands that ESI, in its sole discretion and after consultation with Funding Members, may modify the scope of work, its anticipated results, and the anticipated Deliverables at any time. Ownership, title and Member's right to use the products, services and/or results produced by ESI will be pursuant to Article 5. Upon execution of a Research Portfolio Agreement by a duly authorized representative of ESI, any reference to EPRI in Article 5 shall apply equally to ESI, with the exception of subarticle 5.08(D), which shall apply directly to ESI without change.

(d) In the event Member has selected products and/or services associated with ESI, Member acknowledges and accepts that it is contracting for those projects directly with ESI instead of EPRI and that ultimate responsibility for performance of such research, any liability associated with such research, delivery of the products, services and/or results, collection of funds associated with such effort and completion of all Deliverables agreed to therein rests solely with ESI and not with EPRI. EPRI is acting solely as a collection agent for ESI in this capacity.

Article 5. General Provisions Governing Participation in the Annual Research Portfolio and Additional Project Opportunities

5.01 Internal Use License. In consideration for the Funding made by Member pursuant to each Research Portfolio Agreement or separate Project Opportunity Agreement, and subject to the terms of this Master Agreement, EPRI hereby grants Member and its Affiliates a paid-up, nonexclusive, nontransferable, perpetual license to use the EPRI Materials from those activities, and to allow third parties providing services to Member or its Affiliates, and only for the purpose of providing services to Member or its Affiliates, on a worldwide basis, subject to any export control restrictions, solely for

Member's internal business purposes and not for the benefit of any third party. No commercial (make or sell) or consulting license is granted herein. In the event Member desires to obtain a commercial or consulting license, the parties must first determine exact royalty payments, if any, that would be due EPRI.

5.02 License Restrictions.

(A) Except as set forth herein, Member shall not, directly or indirectly, without EPRI's prior written consent: (i) disclose to or allow the use of EPRI Materials by any third party unless otherwise provided for herein; (ii) use any method to obtain the human readable computer program source code version of EPRI Materials through decompilation, reverse engineering or otherwise; (iii) use any EPRI Materials or EPRI Confidential Information to create materials which are substantially similar to EPRI Materials; (iv) remove or alter EPRI's proprietary rights, limitation of liability, restricted rights and other notices in EPRI Materials or copies thereof; (v) translate any EPRI reports or software into a foreign language; (vi) sublicense, encumber, time-share, rent, or lease the EPRI Materials; or (vii) use the EPRI Materials for third party consulting or commercial purposes.

(B) Member may create Derivative Works and translations of the Deliverables, **excluding software** provided the following shall apply:

- (i) Member's preparation and use of any Derivative Works shall be limited to the conditions set forth in subarticle 5.01, above, and the terms of this Master Agreement unless otherwise provided below; and
- (ii) Member's preparation and use of Derivative Works shall be at Member's own risk, and such preparation and use shall specifically **exclude** any EPRI Representation, Warranties and Indemnity provided in subarticle 5.10 below.

5.03 Title to EPRI Materials.

(A) Except for rights expressly granted in this Article, EPRI shall retain all right, title and interest in EPRI Materials created exclusively by EPRI, and Member hereby waives any ownership right therein. To the extent that Member or an Affiliate contributes to EPRI Materials, the applicable Member or Affiliate shall retain ownership of the contributed portion (provided that EPRI has not paid Member or Affiliate to create such contribution). Provided, however, that with respect to Derivative Works that Member creates, Member shall retain all right, title and interest in such Derivative Works. Except for the license granted to Member in 5.01 above and pursuant to this subarticle 5.03, EPRI reserves all rights and remedies under copyright, trademark, patent, service mark, trade secret, unfair competition and other applicable laws.

(B) All deliverables funded exclusively by Member or an Affiliate, regardless of Member's input, shall be and will remain the exclusive property of Member or an Affiliate, and all right, title and interest therein (including, without limitation, copyright and patent rights) shall vest in Member or Affiliate, and shall, to the fullest extent permitted by law, constitute "work made for hire" under United States copyright law. EPRI shall execute such documents and do such things as may be necessary to effectuate this subarticle 5.03 (B) and to ensure that such deliverable shall become the sole property of Member or an Affiliate, and shall require each of its employees and any employees of its subcontractors to do the same, all at EPRI's sole cost and expense. To the extent necessary to effectuate this subarticle 5.03(B), EPRI hereby assigns to Member its interests in (i) any deliverable that it creates for Member pursuant to a Project Opportunity Agreement and (ii) Derivative Works that Member creates.

5.04 EPRI License Support. EPRI shall have no obligation to provide support or maintenance to Member in connection with any license granted hereunder, unless specifically provided for in the particular Research Portfolio Agreement or Project Opportunity Agreement.

5.05 Member License Grant. Unless otherwise provided in a Project Opportunity Agreement, Member hereby grants EPRI an unrestricted license to publish a summary report regarding the results of EPRI's Annual Research Portfolio and/or Additional Project Opportunities, provided that such report does not contain Confidential Information of Member or otherwise identify Member or its Affiliates in such a summary report.

5.06 Ordering EPRI Materials. Member may only order Deliverables released by EPRI during any term of participation. Research Results may be ordered from the EPRI Distribution Center or downloaded from EPRI's website.

5.07 Nature of Research. EPRI agrees to use commercially reasonable efforts to perform and manage (or cause to be performed by outside contractors) the activities described in each Research Portfolio Agreement or Project Opportunity Agreement, and to provide Member with the Deliverables. Member understands that the conduct of scientific research is inherently uncertain; thus, EPRI, in its sole discretion and after consultation with all Funding Members, may modify the scope of work, its anticipated results, and the anticipated Deliverables at any time.

5.08 Payment.

(A) Payment is due Net 30 days from receipt of EPRI's properly prepared and timely provided invoice. All payments shall be made in U. S. Dollars, and shall not be reduced by charges, taxes, duties or offsets of any kind or nature imposed by any governmental agency or authority of Member's domiciliary country or of any country other than the United States of America, for which Member has sole payment responsibility (including any transportation and insurance costs related to shipment of physical items). Any purchase order issued by Member pursuant to a Research Portfolio Agreement and/or an Additional Project Opportunity Agreement is solely for Member's internal accounting requirements and, as such, the terms and conditions of such purchase order are hereby superseded by the terms and conditions set forth in this Master Agreement.

(B) For Member's support of the Annual Research Portfolio, EPRI shall invoice and Member shall pay the fees in quarterly installments, in accordance with the provisions of subarticle 5.08(A) above.

(C) For Member's support of the Additional Project Opportunities, if any, EPRI shall invoice the entire amount for the first year identified in such agreements upon execution thereof. Payment of such invoices shall be pursuant to subarticle 5.08(A) above. All future annual funding for Additional Project Opportunities, if any, shall be due and payable no later than January 31st of each succeeding year, but in no case, sooner than the time period stated in subarticle 5.08(A) above.

(D) In the event Member selects products and/or services offered by ESI identified in the Annual Research Portfolio, EPRI shall invoice and Member shall pay said invoice pursuant to subarticle 5.08(A) above. EPRI shall then transfer all funding for such selections to ESI on behalf of Member.

5.09 Confidential Information.

(A) Each party to this Master Agreement may provide to one another information that is Confidential Information. The parties agree that all EPRI Materials and EPRI Intellectual Property Rights that are not publicly known are EPRI Confidential Information. All information which is considered Confidential Information by Member must, prior to its disclosure: (a) be labeled as "Confidential" or otherwise clearly identified as confidential; or (b) if disclosed orally, be identified as confidential when disclosed, and be reduced to writing, marked as "Confidential" and delivered to EPRI within twenty days of such oral disclosure. Confidential Information shall not include information which: (i) is or becomes generally available to the public through no act or omission of the receiving party, but only when such information becomes public; (ii) was in the receiving party's lawful possession prior to the disclosure and had not been obtained by the receiving party either directly or indirectly from the disclosing party; (iii) is lawfully disclosed to the receiving party by a third party without restriction on disclosure; (iv) is independently developed by the receiving party; or (v) is disclosed by operation of law, provided that, the recipient promptly notifies the discloser of its obligation to disclose.

(B) Protection of Confidential Information. The Parties agree to hold the other's Confidential Information in confidence in perpetuity. Disclosure of the other Party's Confidential Information shall be strictly limited to the parties' employees, consultants, contractors, and governmental agencies for regulatory compliance or request purposes, on a need to know basis only and subject to a written agreement which protects

such Confidential Information at least as well as this Master Agreement. Member shall provide EPRI with an English language copy or translation of each such nondisclosure agreement upon EPRI's request.

(C) Member's Confidential Information Regarding Its Affiliates. The Parties agree that Confidential Information shall specifically include any information provided regarding Member and Member's Affiliates, as required in each Research Portfolio Agreement. For any such Confidential Information regarding Member and its Affiliates, EPRI agrees to hold said Confidential Information in strict confidence and not to disclose any part of it to others except as expressly permitted in this Agreement. EPRI further agrees not to use Member's Confidential Information except to fulfill its responsibilities contained in this Agreement or pursuant to a Research Portfolio Agreement or Project Opportunity Agreement.

(i) EPRI may disclose said Confidential Information only to its directors, officers, employees, agents or attorneys ("Representatives") who have a need to know. However, prior to doing so, EPRI shall provide any such Representative(s) with a copy of this Agreement and require that he/she/they agree to the terms and conditions hereof by executing a copy of the Nondisclosure Certificate (the "Certificate") attached hereto and incorporated herein as Exhibit C. EPRI shall provide a copy of such Certificate to Member, at the address stated at the bottom of Exhibit C, prior to disclosing any Confidential Information to such Representative. Notwithstanding the foregoing, EPRI shall be responsible for any breach of this Agreement by any of its Representatives.

(ii) Upon the written request of Member, but in no event later than ten (10) days after the expiration of this Agreement, EPRI shall return all Confidential Information in its possession to Member or, at the option of Member, shall destroy all Confidential Information. If Member chooses the latter option, EPRI shall provide evidence of such destruction by certifying same in writing to Member.

(iii) Member shall be entitled to equitable relief, including injunction and specific performance, in the event of a breach or threatened breach of this subarticle. EPRI further waives any requirement that Member post a bond in connection with obtaining any such equitable relief, and agrees that any violation of this subarticle may cause irreparable injury or harm to Member. In the event of a breach or threatened breach of this subarticle, such remedies shall be in addition to any other remedies available to Member at law or equity.

5.10 EPRI Representations, Warranties and Indemnity.

(A) EPRI represents and warrants that it has the right to grant the license and other rights in this Master Agreement. EPRI warrants that the EPRI Materials do not infringe third party intellectual property rights. EPRI does not guarantee or warrant the outcome of the research or the anticipated Deliverables to Member. EPRI hereby represents and warrants that it has the full right and authority to enter into this Master Agreement with Member.

(B) DISCLAIMER OF OTHER WARRANTIES. EXCEPT FOR THE FOREGOING EXPRESS LIMITED WARRANTIES, MEMBER ACCEPTS THE EPRI MATERIALS "AS IS," WITH NO OTHER WARRANTIES OR CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. EXCEPT FOR DAMAGES REALTED TO BREACHES OF CONFIDENTIALITY AND EPRI'S INDEMNITY OBLGIATIONS, THE LIABILITY OF EPRI, ITS SUBSIDIARY, SUPPLIER OR SUBCONTRACTOR TO MEMBER FOR A CLAIM OF ANY KIND RELATED TO THIS MASTER AGREEMENT, ANY EPRI MATERIALS OR ANY EPRI SERVICE, WHETHER FOR BREACH OF CONTRACT OR WARRANTY, STRICT LIABILITY, NEGLIGENCE OR OTHERWISE, SHALL NOT EXCEED \$500,000. EXCEPT FOR DAMAGES REALTED TO BREACHES OF CONFIDENTIALITY AND EPRI'S INDEMNITY OBLGIATIONS, IN NO EVENT WILL EITHER PARTY, OR ANY SUBSIDIARY, SUPPLIER, OR SUBCONTRACTOR OF EPRI BE LIABLE TO MEMBER FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST REVENUES OR PROFITS, LOST DATA, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION), EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

(C) Indemnification by EPRI. EPRI shall indemnify, defend and save Member and Member's Affiliates harmless from and against any damages, costs, fees, claims, loss, expense (including reasonable

attorney fees) or judgment related to unmodified Deliverables and EPRI Materials arising as the result of a third party claim for intellectual property infringement to the extent such claim does not arise in whole or in part, due to Member's use of the EPRI Materials in contravention of this Master Agreement, if Member promptly gives EPRI written notice of the claim, Member provides all reasonable assistance to EPRI requests, and EPRI controls the defense or settlement of the claim, provided however, that EPRI may not settle or compromise such claim or lawsuit without the written consent of Member if any settlement or compromise requires Member to part with any right or make any payment not indemnified or subjects Member to any injunction. Subject to the foregoing, Member shall have the right, at its option and expense, but not the obligation, to retain advisory counsel to represent its interests in defending any such claim or lawsuit. If any action results in an injunction against Member with respect to EPRI Materials or Deliverables, provided pursuant to this Agreement or any document issued against it, or in the event the use of the EPRI Materials or Deliverables, or any part thereof, is, in such suit, held to constitute infringement, EPRI agrees that it shall use best efforts to either (1) procure for Member the right to continue using the infringing subject matter, or (2) replace the infringing EPRI Materials or Deliverables with non-infringing items of equivalent value and functionality or modify the same so that they become non-infringing and retain their full value and functionality. Any obligations to reperform the work are contingent upon approval by the other member/funders and EPRI having adequate Funds.

5.11 Member Representations, Warranties and Indemnity.

(A) Member understands and agrees that EPRI shall have no responsibility for any inter-company cost allocation of the EPRI participation payments between the Member and its participating Affiliates that may be required of them under applicable law or regulation.

(B) Member Companies hereby represents and warrants that they have the full right and authority to enter into this Master Agreement with EPRI, and be bound to the terms and conditions contained herein, including but not limited to all export restrictions, applicable governing law and any dispute resolution provisions. Member Companies further represent and warrant that their signatures herein below do bind them to this Master Agreement. In the event Affiliates are not wholly owned companies, each Affiliate shall enter into a separate license agreement with EPRI prior to having access to or using any EPRI Materials.

(C) Member represents and warrants that before it provides any third party proprietary or confidential information to EPRI for use in connection with any research activity, it will secure all necessary rights and licenses on behalf of EPRI.

(D) Indemnification by Member. Member agrees to indemnify, defend and hold EPRI and EPRI's Affiliates harmless from and against all damages, costs, fees, claims, loss, expense (including reasonable attorney fees) or judgment arising from a third party's claim that Member's use of EPRI Materials was tortious or involved willful misconduct and/or breach of Member's obligations hereunder.

5.12 Termination of Additional Project Opportunities.

(A) Termination for Cause of Additional Project Opportunity. EPRI may, on written notice, terminate a Project Opportunity Agreement including the License, if: (i) Member breaches the funding, confidentiality, proprietary rights or license provisions hereof, (ii) insolvency or bankruptcy proceedings are voluntarily or involuntarily instituted against Member (Member shall give immediate notice to EPRI of its knowledge of such proceedings), (iii) Member attempts to assign this Master Agreement or individual Project Opportunity Agreements without EPRI's written approval, or (iv) Member substantially discontinues its business. EPRI may take such action in any instance above, if Member fails to cure the breach within sixty (60) days after being notified by EPRI of such breach. Member may terminate individual Project Opportunity Agreements, including the License itself, should EPRI fail to cure a breach of the Master Agreement within sixty days of written notification by Member.

(B) Effect of Termination for Cause of Additional Project Opportunity. If individual Project Opportunity Agreements are terminated pursuant to this subarticle, then Member shall cease use of the EPRI Materials from the Project, and within thirty (30) days of termination, Member shall return all EPRI Materials and any reproductions thereof, and uninstall or otherwise permanently delete all EPRI Materials from Member's computer systems, and provide EPRI with written certification of such actions signed by a duly authorized representative of Member.

(C) Termination for Convenience of Additional Project Opportunity.

- (i) For Additional Project Opportunities in which Member is the sole funder, Member may terminate its participation at any time upon at least sixty (60) days prior written notice to the other party. If Member terminates for convenience, EPRI shall refund any excess Funds received from Member after deducting Project costs incurred up to the effective date of termination (including but not limited to non-cancelable commitments based on Member's Funding), and reasonable termination costs, if any. If EPRI terminates for convenience, EPRI shall refund all Funds received from Member.
- (ii) For Additional Project Opportunities in which there are multiple funders, Member may terminate its participation at any time upon at least sixty (60) days prior written notice to EPRI, however, the effective date of such termination shall be December 31 of the year in which notice is given. Member shall not be entitled to a refund of any portion of its Funding provided through the date of termination, nor shall it be entitled to receive Deliverables produced after the effective date of termination.

5.13 Unspent Funds Following Completion of Additional Project Opportunity. The Parties agree upon completion of work in an Additional Project Opportunity, EPRI shall notify Member of any unspent Funds attributable to Member, via email communication to the designated Manager of EPRI Technology Transfer. In the event Member's share of unspent Funds is less than two thousand five hundred dollars (\$2500), EPRI shall not be required to refund said amount to Member, and EPRI shall be free to reallocate such Funds to EPRI's Technology Innovation program. In the event Member's share of unspent Funds is equal to or greater than two thousand five hundred dollars (\$2500), Member's share shall be refunded or, at Member's option, may be reallocated to another Additional Project Opportunity.

5.14 Survival. The provisions of Subarticle 5.01 through 5.02 (Internal Use License and License Restrictions), Subarticle 5.09 (Confidentiality), Subarticles 5.10 and 5.11 (Representations, Warranties and Indemnity), Subarticle 5.12 (Termination of Additional Project Opportunities), Subarticle 5.15 (Dispute Resolution) and Subarticle 5.16 (Miscellaneous) shall survive the termination of any Research Portfolio Agreement, any Project Opportunity Agreement, or this Master Agreement.

5.15 Dispute Resolution.

(A) General. The Parties will attempt to resolve any dispute that may develop between them under this Agreement or a Project Opportunity Agreement. However, if the Parties are unable, at their discretion, to resolve such a dispute, either Party may demand arbitration conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("AAA"), including "expedited procedures," if applicable, but without regard to the amount in dispute, unless either Party objects in writing to the use of such expedited procedures. Except as provided in this arbitration section, the Commercial Arbitration Rules of the American Arbitration Association shall govern the process of the dispute's resolution.

(B) Limits. The arbitrators will be limited to ruling for the recommended value or recommended findings or outcome of either Party, as submitted to the arbitrators by the Parties at the arbitration proceeding, but without the right or ability to determine another value, finding or outcome.

(C) Procedure. Unless the dispute is subject to expedited procedures, in which case the arbitrators will be appointed by the AAA in accordance with its rules for expedited procedures, concurrent with making such a demand, the demanding Party will specify the name and address of the arbitrator selected by it. The other Party will, within twenty (20) days of receipt of the arbitration demand, select its arbitrator. If either Party fails to select an arbitrator in a timely manner, then the other Party may request that the AAA appoint the other arbitrator within fifteen (15) days of such request. The two arbitrators thus selected will, within fifteen (15) days of the selection of the second arbitrator, select the third arbitrator, who will chair the arbitration panel and bring to the proceeding subject-matter expertise on the matter to be arbitrated. Should the two Party-appointed arbitrators fail to appoint the third arbitrator timely, then either Party may request that the AAA appoint a third arbitrator within fifteen (15) days of such request.

(D) Substantive Law. To the extent that the recommendations of the Parties concerning value, findings, or outcome do not address issues raised during the proceeding, the arbitrators will apply the substantive laws of the state of state listed under this Agreement's Governing Law provision. The parties agree that if more than Member, Affiliate and or EPRI are involved in a dispute, the venue will be California.

(E) Time; effect; costs. The Parties will proceed with the arbitration expeditiously with the intent that a decision be rendered within one hundred twenty (120) days from the filing of the demand for arbitration by the initiating Party. The arbitrator's decision will be final and binding on both Parties, and may be enforced in any court having jurisdiction. Each Party will bear its own expenses, including reasonable attorney fees in connection with arbitration undertaken pursuant to this arbitration section. The arbitrators will apportion their fees and expenses, the filing fee and other administrative costs in the award based upon the respective merit of the positions of the Parties.

5.16 Miscellaneous

(A) Governing Law. This Master Agreement, each Research Portfolio Agreement and any Project Opportunity Agreement shall be governed by and construed in accordance with the laws of the State of California, without reference to conflict of law principles. In the event of any discrepancies between the English and foreign language version of this Master Agreement, any Research Portfolio Agreement, and/or any Additional Project Opportunity Agreement, the English version shall prevail.

(B) Export Laws. Member shall comply with all laws, rules and regulations including, without limitation, all U. S. and foreign export laws and regulations. The Parties acknowledge and agree that compliance with such laws and regulations may delay or in rare cases prevent the delivery to Member of EPRI Materials. The Parties agree that access to the EPRI Materials is hereby granted with the specific understanding and requirement that Member is solely responsible after delivery for compliance with all applicable U. S. and foreign export laws and regulations. This responsibility includes an obligation to ensure that any individual receiving access hereunder who is not a U. S. citizen or permanent U. S. resident is permitted access under applicable U.S. and foreign export laws and regulations. Although EPRI may make an informal assessment of the applicable U. S. export classification for specific EPRI Materials, Member acknowledges that this assessment is solely for informational purposes and not for

reliance purposes. Member acknowledges that it is still the obligation of the Member to make its own assessment of the applicable U. S. export classification and to ensure compliance accordingly.

(C) Assignment. This Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement may not be assigned, in whole or in part, by Member or EPRI without the prior written consent of the other party; such consent shall not be unreasonably withheld. The terms of this Master Agreement, any EPRI Research Portfolio Agreement, and any Project Opportunity Agreement shall bind and inure to the benefit of permitted assigns. Any attempted assignment in contravention of this subarticle shall be deemed null and void.

(D) Waiver. No failure or successive failures on the part of either party, its successors, or assigns, to enforce any covenant or agreement, and no waiver or successive waivers on its or their part of any condition of this Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement, shall operate as a discharge of such covenant, agreement, or condition, or render the same invalid, or impair the right of either party, its successors and assigns, to enforce the same in the event of any subsequent breach or breaches by the other party, its successors, or assigns.

(E) Notices. Any notice, demand, request, or other communication or document to be provided under this Master Agreement to a Party to this Master Agreement ("Notice") shall be in writing, and shall be given to the Party at its address or telecopy number set forth in the signature block in each EPRI Research Portfolio Agreement or any Project Opportunity Agreement, or to such other address or telecopy number as the Party may later specify for that purpose by notice to the other Party. Each Notice shall be deemed given and received: (i) if given by telecopy, when the telecopy is transmitted and confirmation of complete receipt is received by that transmitting Party during normal business hours or on the next business day if not confirmed during normal business hours; (ii) if hand delivered or given by overnight delivery service such as Federal Express, the day on which the notice is actually delivered to the address listed herein (whether or not delivered to the Party); (iii) if delivered by international courier, the day on which the notice is actually delivered to the address listed herein, or (iv) if given by normal or certified U.S. mail, two (2) business days after it is posted with the U.S. Postal Service. A copy of legal notices shall be sent to the attention of EPRI's and Member's Legal departments.

(F) Entire Agreement. This Master Agreement, including each concurrent or subsequent Research Portfolio Agreement, and/or any Project Opportunity Agreement, constitutes the entire agreement between the parties and supersedes all previous agreements and understandings. This Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement may not be altered, amended, or modified except by a written instrument signed by the duly authorized representatives of both Parties. If any provision of this Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement is held to be invalid or unenforceable, the remaining provisions of this Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement shall remain in full force.

(G) Independent Contractor. Nothing contained herein shall be construed to imply a joint venture, partnership, or principal and agent relationship between the Parties, and neither Party shall have any right, power, or authority to create any obligation, express or implied, on behalf of the other in connection with the performance hereunder.

(H) Restricted Rights. EPRI Materials are provided hereunder with Restricted Rights – Use, duplication, or disclosure by the United States Government is subject to restrictions as set forth in subparagraph (g)(3)(i), excluding section (g)(3)(i)(b)(5), of the Rights in Technical Data and Computer Software clause at FAR 52.227-14, Alternate III, as amended.

(I) Force Majeure. Any delay in the performance of any duties or obligations of either party (except the payment of money owed) will not be considered a breach if such delay is caused by a shortage of materials outside of EPRI's control, fire, earthquake, flood, or any other event beyond the control of such Party, provided that such Party uses reasonable efforts, under the circumstances, to notify the other Party of the circumstances causing the delay and to resume performance as soon as possible.

(J) Order of Precedence. In the event of any conflict between this Master Agreement, any Research Portfolio Agreement, and any Project Opportunity Agreement, the terms and conditions of individual Research Portfolio Agreement or any Project Opportunity Agreement shall prevail and take precedence unless otherwise expressly superseded by the Parties.

(K) Interpretation of Agreement. The section and other headings in this Master Agreement are inserted solely as a matter of convenience and for reference, and shall be given no effect in the construction or interpretation of this Master Agreement. Unless the context of this Master Agreement otherwise clearly requires, references in the plural form include the singular and vice versa. This Master Agreement has been freely negotiated by all Parties and in the event there is any controversy, dispute, or claim involving the meaning, interpretation, validity, or enforceability of this Master Agreement or any of its terms or conditions, there shall be no inference, presumption, or conclusion drawn against a Party by virtue of such Party having drafted this Master Agreement or any portion hereof. When used herein, the words "include" and "including" shall be construed as "include, without limitation" and "including, without limitation."

THUS DONE AND EXECUTED by the following duly authorized representatives of the parties:

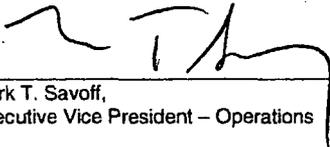
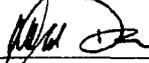
<p>Entergy Services, Inc. Entergy Arkansas, Inc. Entergy Gulf States, Inc. Entergy Louisiana, LLC Entergy New Orleans, Inc. Entergy Mississippi, Inc. Entergy Nuclear, Inc. Entergy Nuclear Generation Company Entergy Nuclear Operations, Inc. Entergy Operations, Inc. Entergy Operations Services, Inc. Entergy Nuclear Vermont Yankees, LLC Entergy Nuclear Indian Point 2, LLC Entergy Nuclear Indian Point 3, LLC Entergy Nuclear Fitzpatrick, LLC TLG Services, Inc.</p> <p>(collectively, "Member Companies")</p> <p><i>Address for Member Companies:</i> Entergy Services, Inc. 639 Loyola Avenue New Orleans, LA 70113 Telephone: 504-576-5353 Facsimile: 504-576-6979</p> <p> _____ Mark T. Savoff, / Date Executive Vice President – Operations</p> <p><i>Authorized Signature for:</i> Entergy Services, Inc. Entergy Arkansas, Inc. Entergy Gulf States, Inc. Entergy Louisiana, LLC Entergy New Orleans, Inc. Entergy Mississippi, Inc. Entergy Nuclear, Inc. Entergy Nuclear Generation Company Entergy Nuclear Operations, Inc. Entergy Operations, Inc. Entergy Operations Services, Inc. Entergy Nuclear Vermont Yankee, LLC Entergy Nuclear Indian Point 2, LLC Entergy Nuclear Indian Point 3, LLC Entergy Nuclear Fitzpatrick, LLC</p> <p> _____ Steven C. McNeal / Date Vice President and Treasurer</p> <p><i>Authorized Signature for:</i> TLG Services, Inc.</p>	<p>Electric Power Research Institute, Inc. ("EPRI")</p> <p>Post Office Box 10412 3420 Hillview Ave. Palo Alto, CA 94303 Telephone 650-855-1088 Fax 650-855-2166</p> <p> WILFRED DERE, 1/31/06 _____ Authorized Signature for EPRI / Date</p> <p>Norma Formanek / Vice President and General Counsel Printed Name of EPRI's Authorized Signatory / Title</p> <p>EPRI Solutions, Inc. ("ESI")</p> <p>Post Office Box 10412 3420 Hillview Ave. Palo Alto, CA 94303 Telephone 650-855- Fax 650-855-</p> <p> 1/31/06 _____ Authorized Signature for ESI / Date</p> <p>WILFRED DERE _____ Printed Name of ESI's Authorized Signatory / Title</p>
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EXHIBIT A – Sample of

*2006 Research Portfolio Agreement
For*

_____ (Member)

1. TERM: January 1, _____ through December 31, _____. The terms and conditions of the Master Agreement between the Parties effective on January 1, 2006 are incorporated herein and govern all research selected hereunder.

2. DESIGNATED MEMBER COMPANIES¹:

Member Companies ²			
Company Name/ State and Country of Organization/ Location of Principal Office	% Ownership	Gross Annual Revenues in U.S. \$	Business Lines or Main Activities
Entergy Services, Inc.	NA		Utility Operations
Entergy Arkansas, Inc.	NA		Utility Operations
Entergy Gulf States, Inc.	NA		Utility Operations
Entergy Louisiana, LLC	NA		Utility Operations
Entergy New Orleans, Inc.	NA		Utility Operations
Entergy Mississippi, Inc.	NA		Utility Operations
Entergy Nuclear, Inc.	NA		Nuclear Operations
Entergy Nuclear Generation Company	NA		Nuclear Operations
Entergy Nuclear Operations, Inc.	NA		Nuclear Operations
Entergy Operations, Inc.	NA		Nuclear Operations
Entergy Operations Services, Inc.	NA		Utility Services
Entergy Nuclear Vermont Yankee, LLC	NA		Nuclear Operations
Entergy Nuclear Indian Point 2, LLC	NA		Nuclear Operations

¹ Participating Affiliates require the identification of applicable pricing metrics prior to inclusion under this Agreement. Overall prices may be affected. Please contact your EPRI Account Executive for specifics prior to submitting the Research Portfolio Agreement.

² Additional data may be required. All data will be used by EPRI solely for the purpose of price calculations, and will be kept confidential.

Entergy Nuclear Indian Point 3, LLC	NA		Nuclear Operations
Entergy Nuclear Fitzpatrick, LLC	NA		Nuclear Operations
TLG Services, Inc.	NA		Nuclear Services
Total			

3. PROGRAM/PROJECT SELECTIONS (Price Sheet or selection tabulation (Int'l), please see Attachment 1).
4. ESI PRODUCT AND/OR SERVICES SELECTIONS (Please see Attachment 2).
5. SPECIAL TERMS AND CONDITIONS GOVERNING THE RESEARCH PORTFOLIO SELECTIONS.

THUS DONE AND EXECUTED by the following duly authorized representatives of the parties:

<p>_____ (“Member”) Printed Business Name of Member</p> <p>_____ Business Address City, State, Zip</p> <p>() - / () - Telephone Number / Fax Number</p> <p>_____ Authorized Signature for Member / Date</p> <p>_____ Printed Name of Member’s Authorized Signatory / Title</p>	<p>EPRI (“EPRI”) Electric Power Research Institute</p> <p>Post Office Box 10412 3420 Hillview Ave. Palo Alto, CA 94303 Telephone 650-855-1088 Fax 650-855-2166</p> <p>_____ Authorized Signature for EPRI / Date</p> <p>_____ Printed Name of EPRI’s Authorized Signatory / Title</p>
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By signing below, ESI agrees to the terms of the Master Agreement which are incorporated by reference herein, and the selection of products and services (if any) identified in Attachment 2.

EPRI Solutions, Inc. (“ESI”)

Post Office Box 10412
3420 Hillview Ave.
Palo Alto, CA 94303
Telephone 650-855-
Fax 650-855-

Authorized Signature for ESI / Date

Printed Name of ESI’s Authorized Signatory / Title

EXHIBIT B – Sample of Project Opportunity Agreement

1. **Project Title, Agreement and Transaction Numbers:** This Project Opportunity Agreement applies to the Project entitled. The Parties will reference Project Opportunity Agreement number _____ in all correspondence. The terms and conditions of the Master Agreement between the Parties dated _____ are incorporated herein and govern all Work hereunder.

2. **Contact Information:**

<u>Contact</u>	<u>Name</u>	<u>Telephone</u>	<u>Fax</u>	<u>Email</u>
EPRI PM:				
EPRI Contracts:				
EPRI Client Relations:				
Member Contracts:				
Member Project Manager:				
Member Accounts Payable				

3. **Project Funding:**

<u>Funds: Year/Type</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>Total Funds</u>
Member	\$	\$	\$	\$	\$
Member TC Pool Funds	\$	\$	\$	\$	\$
Total Funding	\$	\$	\$	\$	\$

4. **Statement of Work:**

5. **Project Tasks:**

6. **Invoicing Information:**

7. **Project Deliverables:**

THUS DONE AND EXECUTED by the following duly authorized representatives of the parties:

<p>_____ Printed Business Name of Member ("Member")</p> <p>_____ Business Address City, State, Zip</p> <p>() / () Telephone Number / Fax Number</p> <p>_____ Authorized Signature for Member / Date</p> <p>_____ Printed Name of Member's Authorized Signatory / Title</p>	<p>Electric Power Research Institute, Inc.</p> <p>Post Office Box 10412 3420 Hillview Ave. Palo Alto, CA 94303 Telephone 650-855- Fax 650-855-</p> <p>_____ Authorized Signature for EPRI / Date</p> <p>_____ Printed Name of EPRI's Authorized Signatory / Title</p>
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Exhibit C
Nondisclosure Certificate

FOR USE WITH THE EPRI RESEARCH PORTFOLIO AGREEMENT

1. Pursuant to the terms and conditions of above-listed Agreement, I understand that Confidential Information may be provided to me regarding Member's Affiliates. I certify that I have been given a copy of the Agreement, have read it, and agree to the terms and conditions therein.

2. I understand that the Confidential Information regarding Member's Affiliates, and any notes, memoranda, or any other form of information regarding or derived from the Confidential Information, shall not be disclosed to anyone other than in accordance with the terms of the Research Portfolio Agreement and shall be used only for the express and limited purpose set forth therein.

Signature: _____

James J. Arcella

Print Name: _____

JAMES J. ARCELLA

Representing: _____

EPRI

Date: _____

2/6/06

Please return completed Nondisclosure Certificates to:

Mark Bruckner

April 18, 2008

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of)
)
Entergy Nuclear Vermont Yankee, LLC) Docket No. 50-271-LR
and Entergy Nuclear Operations, Inc.) ASLBP No. 06-849-03-LR
)
(Vermont Yankee Nuclear Power Station))

**AFFIDAVIT OF SCOTT GOODWIN IN SUPPORT OF ENTERGY'S ANSWER IN
OPPOSITION TO NEW ENGLAND COALITION, INC.'S MOTION TO COMPEL AND
FOR SUBPOENA**

County of Windham)
) ss.
State of Vermont)

I, Scott Goodwin, being duly sworn, state:

1. I am employed by Entergy Nuclear Operations, Inc. ("Entergy") as a Design Engineering Supervisor at Vermont Yankee ("VY").
2. I have twenty-five years experience in design, construction, and modification of nuclear power plant structures and piping systems.
3. My involvement with flow-accelerated corrosion ("FAC") has been to supervise the engineering personnel at VY that are responsible for the implementation of the FAC Program at VY since 1990. The implementation of the FAC Program at VY includes the use of the CHECWORKS program by engineers under my supervision.
4. Entergy does not have, and never has had possession, custody or control of the source code or the mathematical algorithm for the CHECWORKS program.

Entergy has only had access to a compiled, executable application that allows the user to run the CHECWORKS program using plant-specific data. Such executable application is analogous to the applications that the public can obtain from a software vendor such as Microsoft; e.g., Word or Excel: the user can run the application to perform its intended task but does not have access to the source code that drives the application.

Further the affiant sayeth not.


Scott Goodwin

Subscribed and sworn to before me
this 18 th day of April, 2008



Notary Public

My commission expires: 2/10/11

