



Crystal River Nuclear Plant  
Docket No. 50-302  
Operating License No. DPR-72

Ref: 10 CFR 50.90

August 30, 2007  
3F0807-05

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – License Amendment Request (LAR) #296, Revision 1,  
Supplement 1: Measurement Uncertainty Recapture, Submittal of the Cameron  
Bounding Uncertainty Analysis Report (TAC No. MD5500)

References: 1. FPC to NRC letter, 3F0607-05, dated June 28, 2007, LAR #296, Revision 1,  
Measurement Uncertainty Recapture Uprate  
2. FPC to NRC letter, 3F0607-04, dated June 18, 2007, LAR #296, Revision 0,  
Measurement Uncertainty Recapture Uprate, Submittal Schedule Update

Dear Sir:

In accordance with the provisions of 10 CFR 50.90, Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., hereby provides a copy of Cameron Engineering Report ER-579, Revision 2, "Bounding Uncertainty Analysis for Thermal Power Determination for Crystal River Unit 3 Using the Leading Edge Flow Meter (LEFM) Check-Plus System," on the testing performed for the Crystal River Unit 3 (CR-3) Measurement Uncertainty Recapture instrumentation. The results of this testing are required to be provided to the NRC, by September 1, 2007, as documented in a commitment made in Reference 1 above. This report provides the validated heat balance uncertainty inputs for feedwater flow and temperature.

The testing at Alden Labs was initially performed on piping configurations where the LEFM was downstream of flow straighteners similar to those currently installed in the CR-3 feedwater piping. The channelization of flow exiting the flow straighteners adversely impacted the LEFM performance. Therefore, the flow straighteners needed to be re-located downstream of the LEFM spool piece or removed. The "B" train configuration was retested with and without the upstream flow straightener. The test results led to two changes in the planned field installation at CR-3:

- The "A" train initial test results did not indicate significant swirl which is consistent with what would be expected of the plant piping configuration. The "A" train is generally on a single horizontal plane with a single upstream-bend. Those results and plant interferences with relocating the flow straightener downstream led to the decision to remove it.
- The "B" train initial test results did identify a somewhat significant swirl due to a more complex upstream geometry (horizontal and vertical bends). The swirl does not adversely impact the LEFM, but might have some negative impact on the existing flow

Progress Energy Florida, Inc.  
Crystal River Nuclear Plant  
15760 W. Powerline Street  
Crystal River, FL 34428

Atol

NRR

adversely impact the LEFM, but might have some negative impact on the existing flow nozzle which will remain in-service. Thus, the straightener will be relocated downstream of the LEFM, but still upstream of the flow nozzle.

The test results used in this report were based on the revised (LEFM upstream) configuration for the "B" train. The "A" train results were based on insights gained from the initial "A" train testing and the "B" train retesting.

The test results are used to derive various inputs used to produce an uncertainty value for the LEFM application in the CR-3 configuration. The LEFM uncertainty is an input into the overall heat balance uncertainty calculation. The heat balance uncertainty calculation, supplied as an attachment to the LAR (Revision 1, dated June 28, 2007) was performed using earlier (bounding) values. The testing and analysis performed validates that the inputs used in the heat balance uncertainty calculation are truly bounding values.

In particular, the heat balance uncertainty calculation supplied as an attachment to the LAR, Revision 1, dated June 28, 2007, used  $\pm 0.34\%$  for combined temperature and feedwater flow uncertainty. The test results actually support values of  $\pm 0.30\%$  for combined temperature and feedwater flow uncertainty. The overall effect should be to reduce the total uncertainty about 0.04%.

Attachment A of this submittal provides the proprietary Cameron report. Cameron International requests that the proprietary information in this submittal be withheld from public disclosure in accordance with 10 CFR 2.390 (a)(4) and 10 CFR 2.390(d)(1). An affidavit supporting this request is provided in Attachment B.

This letter establishes no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Paul Infanger, Supervisor, Licensing and Regulatory Programs at (352) 563-4796.

Sincerely,



Dale E. Young  
Vice President  
Crystal River Nuclear Plant

DEY/par

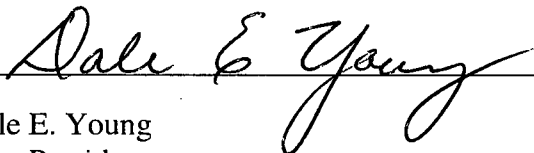
Attachments: A. Cameron Engineering Report ER-579, Revision 2, "Bounding Uncertainty Analysis for Thermal Power Determination for Crystal River Unit 3 Using the LEFM Check-Plus System" (Proprietary)  
B. Cameron International Application For Withholding Proprietary Information From Public Disclosure

xc: NRR Project Manager  
Regional Administrator, Region II  
Senior Resident Inspector

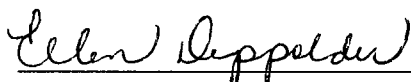
**STATE OF FLORIDA**

**COUNTY OF CITRUS**

Dale E. Young states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

  
\_\_\_\_\_  
Dale E. Young  
Vice President  
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 30<sup>th</sup> day of August, 2007, by Dale E. Young.

  
\_\_\_\_\_  
Signature of Notary Public  
State of Florida



\_\_\_\_\_  
(Print, type, or stamp Commissioned  
Name of Notary Public)

Personally ☒ Known ☐ -OR- Produced Identification ☐

**PROGRESS ENERGY FLORIDA, INC.**

**CRYSTAL RIVER UNIT 3**

**DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72**

**LICENSE AMENDMENT REQUEST #296, REVISION 1,  
SUPPLEMENT 1**

**ATTACHMENT B**

**MEASUREMENT UNCERTAINTY RECAPTURE**

**CAW 07-15**

**Application for Withholding Proprietary Information From  
Public Disclosure**



**Measurement Systems**

Caldon® Ultrasonics Technology Center  
1000 McClaren Woods Drive  
Coraopolis, PA 15108  
Tel 724-273-9300  
Fax 724-273-9301  
www.c-a-m.com

August 28, 2007  
CAW 07-15

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE**

Subject: Caldon® Ultrasonics Engineering Report: ER-579 Rev.2 "Bounding Uncertainty  
Analysis for Thermal Power Determination at Crystal River Unit 3 Using the  
LEFM✓ + System"

Gentlemen:

This application for withholding is submitted by Cameron International Corporation, a Delaware Corporation (herein called "Cameron") on behalf of its operating unit, Caldon Ultrasonics Technology Center, pursuant to the provisions of paragraph (b)(1) of Section 2.390 of the Commission's regulations. It contains trade secrets and/or commercial information proprietary to Cameron and customarily held in confidence.

The proprietary information for which withholding is being requested is identified in the subject submittal. In conformance with 10CFR Section 2.390, Affidavit CAW 07-15 accompanies this application for withholding setting forth the basis on which the identified proprietary information may be withheld from public disclosure.

Accordingly, it is respectfully requested that the subject information, which is proprietary to Cameron, be withheld from public disclosure in accordance with 10CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to this application for withholding or the accompanying affidavit should reference CAW 07-15 and should be addressed to the undersigned.

Very truly yours,

Calvin R. Hastings  
General Manager

Enclosures (Only upon separation of the enclosed confidential material should this letter and affidavit be released.)

August 28, 2007  
CAW 07-15

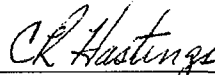
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:


Before me, the undersigned authority, personally appeared Calvin R. Hastings, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Cameron International Corporation, a Delaware Corporation (herein called "Cameron") on behalf of its operating unit, Caldon Ultrasonics Technology Center, and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

  
\_\_\_\_\_  
Calvin R. Hastings  
General Manager

Sworn to and subscribed before me

this 28th day of

August, 2007

  
\_\_\_\_\_  
Notary Public

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal  
Joann B. Thomas, Notary Public  
Findlay Twp., Allegheny County  
My Commission Expires July 28, 2011

Member, Pennsylvania Association of Notaries

1. I am the General Manager of Caldon Ultrasonics Technology Center, and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rulemaking proceedings, and am authorized to apply for its withholding on behalf of Cameron.
2. I am making this Affidavit in conformance with the provisions of 10CFR Section 2.390 of the Commission's regulations and in conjunction with the Cameron application for withholding accompanying this Affidavit.
3. I have personal knowledge of the criteria and procedures utilized by Cameron in designating information as a trade secret, privileged or as confidential commercial or financial information. The material and information provided herewith is so designated by Cameron, in accordance with those criteria and procedures, for the reasons set forth below.
4. Pursuant to the provisions of paragraph (b) (4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
  - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Cameron.
  - (ii) The information is of a type customarily held in confidence by Cameron and not customarily disclosed to the public. Cameron has a rational basis for determining the types of information customarily held in confidence by it and, in that connection utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Cameron policy and provides the rational basis required. Furthermore, the information is submitted voluntarily and need not rely on the evaluation of any rational basis.

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

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Cameron's competitors without license from Cameron constitutes a competitive economic advantage over other companies.
- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, and assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Cameron, its customer or suppliers.
- (e) It reveals aspects of past, present or future Cameron or customer funded development plans and programs of potential customer value to Cameron.
- (f) It contains patentable ideas, for which patent protection may be desirable.

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

- (a) The use of such information by Cameron gives Cameron a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Cameron competitive position.



- (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Cameron ability to sell products or services involving the use of the information.
  - (c) Use by our competitor would put Cameron at a competitive disadvantage by reducing his expenditure of resources at our expense.
  - (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Cameron of a competitive advantage.
  - (e) Unrestricted disclosure would jeopardize the position of prominence of Cameron in the world market, and thereby give a market advantage to the competition of those countries.
  - (f) The Cameron capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence, and, under the provisions of 10CFR Section 2. 390, it is to be received in confidence by the Commission.
- (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same manner or method to the best of our knowledge and belief.

- (v) The proprietary information sought to be withheld is the submittal titled Caldon<sup>®</sup> Ultrasonics Engineering Report: ER-579 Rev. 2 "Bounding Uncertainty Analysis for Thermal Power Determination at Crystal River Unit 3 Using the LEFM ✓ + System" and is designated therein in accordance with 10CFR §§ 2.390(b)(1)(i)(A,B), with the reason(s) for confidential treatment noted in the submittal and further described in this affidavit. This information is voluntarily submitted for use by the NRC Staff in their review of the accuracy assessment of the proposed methodology for LEFM CheckPlus Systems used by Crystal River Unit 3 for an MUR UPRATE.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Cameron because it would enhance the ability of competitors to provide similar flow and temperature measurement systems and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Cameron effort and the expenditure of a considerable sum of money.

In order for competitors of Cameron to duplicate this information, similar products would have to be developed, similar technical programs would have to be performed, and a significant manpower effort, having the requisite talent and experience, would have to be expended for developing analytical methods and receiving NRC approval for those methods.

Further the deponent sayeth not.