



**Entergy Nuclear Northeast**  
Indian Point Energy Center  
450 Broadway, GSB  
P.O. Box 249  
Buchanan, NY 10511-0249  
Tel (914) 254-2055

Fred Dacimo  
Vice President  
Operations License Renewal

NL-14-002

January 02, 2014

U.S. Nuclear Regulatory Commission  
Document Control Desk  
11545 Rockville Pike, TWFN-2 F1  
Rockville, MD 20852-2738

**SUBJECT:** Reply to Request for Additional Information Regarding the License Renewal Application  
Indian Point Nuclear Generating Unit Nos. 2 and 3  
Docket Nos. 50-247 and 50-286  
License Nos. DPR-26 and DPR-64

**REFERENCE:** NRC letter, "Request for Additional Information for the Review of the Indian Point Nuclear Generating Unit Nos. 2 and 3, License Renewal Application Environmental Review (TAC NOS. MD5411 and MD5412)" dated November 22, 2013

Dear Sir or Madam:

Entergy Nuclear Operations, Inc is providing, in the attachment and the enclosed compact disk, the additional information requested in the referenced letter pertaining to NRC review of the License Renewal Application (LRA) for Indian Point 2 and Indian Point 3.


There are no new regulatory commitments in this submittal.

If you have any questions, or require additional information, please contact Mr. Robert Walpole at 914-254-6710.

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

1/2/, 2014.

Sincerely,



FRD/rw

A128  
NRR

**Attachment:** Reply to NRC Request for Additional Information Regarding the License Renewal Application

**Enclosure:** Compact Disk Containing the SAMA Engineering Project Cost Estimates Prepared by RCM Technologies

**cc:** Mr. William Dean, Regional Administrator, NRC Region I (w/o enclosure)  
Mr. Sherwin E. Turk, NRC Office of General Counsel, Special Counsel (w/o enclosure)  
Mr. Dave Wrona, NRC Branch Chief, Engineering Review Branch I (w/o enclosure)  
Ms. Lois James, NRC Environmental Project Manager (w/o enclosure)  
Ms. Kimberly Green, NRC Sr. Project Manager, Division of License Renewal (w/o enclosure)  
Mr. Douglas Pickett, NRR Senior Project Manager (w/o enclosure)  
Ms. Bridget Frymire, New York State Department of Public Service (w/o enclosure)  
NRC Resident Inspector's Office (w/o enclosure)  
Mr. Francis J. Murray, Jr., President and CEO NYSERDA (w/o enclosure)

**ATTACHMENT 1 TO NL-14-002**

**REPLY TO NRC REQUEST FOR ADDITIONAL INFORMATION**

**REGARDING THE**

**LICENSE RENEWAL APPLICATION**

**ENTERGY NUCLEAR OPERATIONS, INC.  
INDIAN POINT NUCLEAR GENERATING UNIT Nos. 2 and 3  
DOCKET NOS. 50-247 and 50-286**

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3  
LICENSE RENEWAL APPLICATION (LRA)  
REQUEST FOR ADDITIONAL INFORMATION (RAI)

**NRC RAI**

Your May 6, 2013, letter to the NRC states:

"The completed SAMA engineering project cost estimates were prepared by RCM Technologies for Entergy in accordance with sound engineering practices and have been reviewed and approved by Entergy management."

Please provide the RCM Technologies report and cost estimates, including definitions of the cost breakdowns:

- (1) Entergy engineering support, including study, design, and project management;
- (2) Contract engineering support, including field engineers and planners;
- (3) Materials and equipment;
- (4) Plant craft labor;
- (5) Other Entergy support, including Quality Control, Training, and Operations Department; and
- (6) Other contract support, including security, health physics, and radwaste processing and storage.

**Response to RAI**

As noted in the Request for Additional Information (RAI), on May 6, 2013 Entergy submitted to the NRC the results of completed engineering project cost estimates for severe accident mitigation alternatives (SAMAs) previously identified as potentially cost-beneficial for Indian Point Nuclear Generating Units 2 and 3 (IPEC). On May 17, 2013, the engineering project cost estimates were produced to both New York State and the NRC as part of the ongoing mandatory disclosure process in the IPEC license renewal proceeding. The completed SAMA engineering project cost estimates were prepared by RCM Technologies for Entergy and as discussed further below the format and level of detail of the SAMA cost estimates are consistent with other engineering project cost estimates prepared for purposes of Entergy capital project funding. RCM prepared a separate engineering project cost estimate for each of the twenty-two potentially cost beneficial SAMAs. A copy of each SAMA cost estimate is included on the enclosed CD. There is no separate RCM Technologies report.

The requested definitions of the cost breakdowns are as follows.

- (1) Entergy engineering support, including study, design, and project management

**Study:**

Entergy has three general phases of an engineering project, study, design, and implementation. The first phase, study, is used to prepare preliminary design and

implementation estimates, and usually advances after initial funds have been authorized. Studies generally are performed prior to the development of detailed designs, and prior to final management approval of design and implementation of the project.

#### Design:

The design phase is the development of the detailed design including drawings, bill of materials, procurement specification, procedures, computer models, databases and configuration control updates, in adequate detail to implement the project. It provides details associated with, but not limited to:

- Conditions such as pressure, flow, temperature, fluid chemistry, and voltage/current
- Material aging and qualifications
- Instrumentation
- Environmental conditions from internal and external events including seismic and flooding
- Plant discharges
- Plant security
- Fire protection
- Radiation protection and controls
- HVAC
- Codes, standards and regulatory requirements

#### Project Management:

Project management provides monitoring and control of the project to ensure it safely achieves the project deliverables within the approved scope, cost and schedule. These responsibilities include, but are not limited to:

- Project goals and objectives
- Funding justifications
- Identifying the required support areas for design and implementation of the project team
- Facilitating meetings
- Development of the project plan
- Assure overall development of the study, design, and implementation phase estimates and the review, and approval, of the estimates
- Monitoring performance of the project against the project controls
- Ensuring completion of project closeout activities
- Approving project related contracts or revisions

(2) Contract engineering support, including field engineers and planners

Contract engineering support may be required during periods when in-house staff either is resource constrained or lack the expertise to perform the necessary engineering. Examples include projects such as turbine overhaul, HVAC, steam fitting, and high voltage installations. Under the oversight of Entergy design engineering or project management, the contract field engineer would resolve installation anomalies and design discrepancies. They would work with installers and in-house engineering to revise the design as needed. Contract planners would sequence the final design and create a step-by-step installation plan, including obtaining material, quality assurance hold points, manpower requirements, ensure return-to-service final testing is complete, etc.

(3) Materials and equipment

Materials and equipment refer to the various components required to install an engineering change, such as transmitters, piping, heat exchangers, cables, pumps, etc. The components must be specified in a bill of materials for each new engineering change at the beginning of the design. The bill of materials facilitates the purchase of long lead time items, facilitates installation, configuration control, identification of spare parts, and cost estimating of the project.

(4) Plant craft labor

Plant craft labor generally refers to in-house labor forces such as pipefitters, electricians, welders, labors, carpenters, etc.

(5) Other Entergy support, including quality control, training, and operations department

During the development of an engineering change, various departments must participate to ensure the change is of the highest quality and meets the intent and needs of the facility, specifically:

- Quality control measures are applied as required by 10CFR50 Appendix B by performing independent assessments during the design and implementation stages
- Training may be required depending on the nature of the engineering change. As examples, there may be a change in the operation of a system, structure, or component (SSC) requiring training to ensure the SSC is operated correctly. The SSC may be different than other SSCs in the plant requiring training for the affected departments
- Operations department participation is essential in the engineering change to ensure their needs are met, including identification of operating procedure changes, simulator changes, and, as stated above, training on the affected equipment

(6) Other contract support, including security, health physics, and radwaste processing and storage

Other contract support may be required during periods when in-house staff either is resource constrained or lacks the expertise to implement the engineering change. For example, an engineering change that could impact the security system requires a review by security personnel. Review of the security system can only be performed by individuals who have been qualified to review safeguards materials. The review would consider vital areas, barrier breaches, proximity to fences, security doors, lighting, communications, etc. During implementation of the engineering change, additional health physics technicians may be needed to support the work scope. In addition, radioactive waste may be generated requiring storage and processing for shipment to off-site facilities, thereby incurring additional project costs.