

July 1, 1999

FOR: The Commissioners

FROM: William D. Travers /s/  
Executive Director for Operations

SUBJECT: LESSONS LEARNED FROM THE TRANSFER OF THE OPERATING LICENSES OF THE THREE MILE ISLAND UNIT 1 AND PILGRIM  
NUCLEAR POWER STATIONS

## PURPOSE:

To provide the Commission with an evaluation of, and recommendations for improvement in, the processes used in the staff's review and approval of the applications for transfer of the operating licenses (OLs) of the Three Mile Island Nuclear Power Station Unit 1 (TMI-1) and the Pilgrim Station (Pilgrim). This paper fulfills a milestone under item VI.A., "License Transfers," in the Response to Issues Raised Within the Senate Authorization Context and July 17, 1998 Stakeholder Meeting.

## BACKGROUND:

On December 3, 1998, AmerGen Energy Company, LLC (AmerGen) and GPU Nuclear, Inc. (GPUN) applied for NRC consent to the transfer of the OL for TMI-1 from GPUN to AmerGen. The proposed sale of TMI-1 was the first-of-a-kind sale of an entire nuclear power reactor from one company to another unrelated company, which, in addition, raised issues regarding foreign ownership, control, and domination. The formal application was submitted to the NRC several months after the initial public announcement of the sale in the summer of 1998. The NRC committed to complete its technical and financial review of the application within 3 months of its receipt of the application in order not to unnecessarily impede this license transfer, commensurate with the NRC's mandate to protect public health and safety.

In the second announced sale of an entire nuclear plant, on December 21, 1998, the Boston Edison Company (Boston Edison), on behalf of itself and the Entergy Nuclear Generating Company (Entergy Nuclear), applied to the NRC to transfer the OL for Pilgrim.

The remainder of this paper contains a discussion of the lessons learned from the TMI-1 and Pilgrim license transfers. The Attachment contains a summary of the chronology and the process germane to both license transfers.

## DISCUSSION

- [Lessons Learned From the TMI-1 License Transfer](#)
- [Lessons Learned From the Pilgrim License Transfer](#)
- [Summary](#)

## LESSONS LEARNED FROM THE TMI-1 LICENSE TRANSFER

The staff's analysis of the license transfer, which culminated in the safety evaluation report (SER), the order approving the transfer, and the conforming license amendments, required extensive, often groundbreaking, work by individuals with technical, financial, legal, and project management expertise. Given the new policy issues raised, the complexity of the issues, and the short review schedule, the review process worked well by producing a high-quality product on schedule. The staff believes that certain actions especially contributed to this success and should be replicated in future transfer reviews. First, early, extensive engagement between the staff and the applicants before formal submittal of the application served to highlight and "flesh out" important issues. Second, this early engagement allowed the staff to begin work early on new and unique policy issues (e.g., foreign ownership) so as to raise them with the Commission and enabled the Commission to make timely policy decisions. Third, by focusing on an accelerated acceptance review, the staff facilitated the applicant's completion of the information base, which, in turn, allowed the staff to perform a comprehensive, yet timely, review. Finally, although the process by which the staff completed the safety evaluation was, of necessity, complex and subject to much internal discussion, the collegial approach utilized by NRR and OGC helped to resolve many difficult issues.

Notwithstanding the general success of the project, the staff has identified areas in which this process may be improved for future license transfer actions and has initiated action to implement these improvements. First, given the first-of-a-kind nature of the TMI-1 license transfer, the 3-month technical review schedule was overly optimistic. Although the review ultimately accomplished its goals and met the schedule, the time pressures could have caused, but fortunately did not, substantive mistakes in the work product. Late developments caused severe short-term time pressure. Future license transfers involving sales of plants to operate as merchant plants, or involving foreign ownership considerations, will be more straightforward as a result of the development of a "Standard Review Plan [SRP] Regarding Foreign Ownership, Control, or Domination of Applicants for Reactor Licenses," given that such policy issues will generally have been addressed. Nevertheless, because each license transfer is likely to have unique characteristics, the staff expects that future transfer requests may well raise new policy issues that may take additional time to resolve. Thus, although the staff expects that it will be able to complete the review of some plant sales in 3 months, other reviews may take longer because of new, unforeseen issues and resulting information needs that may arise.

Second, the complexity of the TMI-1 transfer application caused staff to develop its SER in stages. This, coupled with competing time demands on the legal staff, did not allow the legal staff to focus early on all of the information it would need for its review. OGC's review was essential to the successful and timely completion of the project. However, both OGC and NRR resources would have been used more efficiently if NRR had been able to resolve all issues and thus submit a complete review package earlier in the process. As a result, NRR and OGC will continue to ensure development of appropriate

and coordinated schedules for future transfer applications.

Third, procedures for the amendment of the indemnity agreement and other aspects of required offsite and onsite insurance proved to be insufficiently documented. The applicants were not aware of some of the procedures for demonstrating compliance with insurance and indemnity requirements that the NRC staff uses. This resulted in last minute efforts by both the staff and applicants that might have otherwise been avoided. Consequently, the staff is evaluating the development of an SRP to document its procedures in this area and is also evaluating possible modification to these procedures.

In summary, the staff successfully completed its review of the TMI-1 license transfer. Although the staff might have approached certain aspects of the review differently to optimize the process, it believes that the process worked well and it has taken steps to implement the relatively few lessons learned.

#### LESSONS LEARNED FROM THE PILGRIM LICENSE TRANSFER

As with the TMI-1 transfer, the staff analysis of the Pilgrim license transfer, which culminated in the SER, the order approving the transfer, and the conforming license amendments, required extensive work by individuals with technical, financial, legal, and project management expertise. However, given that the TMI-1 review established precedent for the NRC's review of sales of merchant plants, many of the new policy issues raised in the TMI-1 transfer were satisfactorily resolved in time for the Pilgrim transfer review. Further, the Pilgrim transfer did not raise foreign ownership issues that were present with the TMI-1 transfer. The staff believes that the Pilgrim process worked well by producing a high-quality product on schedule, particularly in view of the fact that staff resources were primarily focused on the TMI-1 license transfer, which was under review at essentially the same time. The staff believes that the positive actions discussed previously with respect to the TMI-1 license transfer review also contributed to the success of the Pilgrim review and should be replicated in future transfer reviews. Although the staff believes that its experience with the TMI-1 transfer helped the Pilgrim review proceed more smoothly, the last-minute identification of additional information needs (i.e., the financial ability of Entergy International, Inc., a sister company of Entergy Nuclear, to guarantee \$50 million in operating expense contributions, if needed) indicates that such contingencies need to be built into future license transfer review schedules.

#### SUMMARY

The staff believes that the processes that it used to evaluate and approve the license transfer applications for TMI-1 and Pilgrim were successful. Particularly, the staff intends to replicate the following steps in future license transfers: (1) engaging license applicants and staff in advance of a formal application; (2) raising policy issues early before the Commission; and (3) performing accelerated acceptance reviews. With respect to areas that may be improved, the staff has initiated action in the following areas: (1) developing more realistic schedules for license transfers with unique policy implications; (2) completing an entire SER for review and coordinating the establishment of appropriate review milestones with OGC; (3) issuing guidance on the indemnity and insurance requirements of license transfers; and (4) identifying additional information needs early.

#### RESOURCES:

There are no additional resource implications based on the evaluation provided herein. The additional processes identified will be accommodated by using existing staff resources.

#### COORDINATION:

OGC has no legal objection to this paper.

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Attachment: [Summary of TMI-1 and Pilgrim License Transfer Reviews](#)

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ATTACHMENT

#### SUMMARY OF TMI-1 AND PILGRIM LICENSE TRANSFER REVIEWS

- [The TMI-1 License Transfer](#)
- [The Pilgrim License Transfer](#)

#### The TMI-1 License Transfer

##### Summary of Chronology and Process

In July 1998, AmerGen Energy Company, LLC (AmerGen) and GPU Nuclear, Inc. (GPUN), together with PECO Energy Company and British Energy, plc (the joint owners of AmerGen), announced the sale of the Three Mile Island Nuclear Power Station Unit 1 (TMI-1) from GPUN to AmerGen. In early September 1998, after GPU Energy and AmerGen agreed to the terms of the TMI-1 sale, the NRC staff encouraged the applicants to meet to discuss those areas of the license transfer review in which potentially complex policy issues might lengthen the application review time. A public meeting was held between the staff and the applicants on September 17, 1998. This meeting was transcribed in order to establish an early record so that the staff

could begin certain aspects of the review in advance of the formal application. Telephone conversations between the staff and the applicants in advance of the meeting emphasized the areas of foreign ownership and financial qualifications. As a result, applicants submitted a paper on "Foreign Ownership Issues Related to the Transfer of the TMI-1 License to AmerGen," which provided the staff with the information needed to prepare a Commission paper (SECY-98-252, October 30, 1998) to solicit the Commission's views on the foreign ownership issue associated with AmerGen's purchase of TMI-1.<sup>(1)</sup>

AmerGen and GPUN submitted their formal application for license transfer on December 4, 1998. (The application was dated December 3, 1998.) The application contained two 3.5 inch looseleaf binders of information. The staff completed its acceptance review of the application within the 2 weeks allotted and sent the applicant a request for additional information (RAI) on December 21, 1998. The applicants responded to the RAI with the requested additional information on January 11, 1999.

Four aspects of the sale and license transfer application also posed virtually first-of-a-kind policy issues for the NRC. First, British Energy, plc, a foreign corporation, indirectly owns 50 percent of AmerGen. Section 104d of the Atomic Energy Act of 1954, as amended (AEA), prohibits the NRC from issuing a license for a nuclear power plant under Section 104 to "any corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government." The NRC has had limited precedent in addressing this issue and had never before faced foreign ownership considerations in the transfer of an OL for a nuclear power plant. Thus, the NRC had to decide quickly whether the actions proposed by AmerGen to negate any foreign control were sufficient to allow the NRC to approve the transfer.

Second, AmerGen intends to operate TMI-1 as a "merchant plant" and sell power from it on the open electricity market. Until the TMI-1 sale is completed, all other nuclear plants will have been operated essentially as cost-of-service plants, subject to ratemaking authority of the State public utility commissions (PUCs), the Federal Energy Regulatory Commission (FERC), or the utility itself.<sup>(2)</sup> Plant production costs under cost-of-service ratemaking are typically passed on to customers regardless of electric supply or demand in a given market. In contrast, a merchant plant has no guarantees that the market price of electricity will be sufficient to cover plant production costs. Further, at least initially, AmerGen's only significant asset will be its investment in TMI-1; therefore, any shortfalls in revenues from TMI-1 cannot be compensated by revenues from other assets. Thus, the NRC had to address issues with respect to the financial qualifications of AmerGen to operate TMI-1 safely that it did not have to address in previous license transfer applications.

Third, the issue of decommissioning funding assurance for TMI-1 presented the NRC with a unique challenge. As part of the purchase agreement between GPUN and AmerGen, GPUN agreed to prefund the TMI-1 decommissioning trust account for at least \$303 million. This amount exceeds the minimum amount required by the generic formulas in 10 CFR 50.75(c), and thus allows AmerGen to buy TMI-1 without providing additional assurance for any unfunded portion of the decommissioning cost estimate. However, in an effort to forestall any adverse Federal income tax consequences from the sale of TMI-1 and the buildup of additional decommissioning funding required under the terms of the sale, GPUN and AmerGen proposed that GPU Energy (the three owner subsidiaries of GPU, Inc., the parent company of GPUN) hold the decommissioning trust until such time as the U.S. Internal Revenue Service (IRS) issued a favorable ruling on the tax consequences related to the transfer of TMI-1 decommissioning funds. Although GPU Energy stated that it acknowledged and voluntarily accepted continued NRC jurisdiction over GPU Energy's actions with respect to the decommissioning trust funds, it declined to remain an NRC licensee for TMI-1. Thus, the NRC needed to ensure that the decommissioning fund would remain protected with an entity that was not ostensibly an NRC licensee.

Fourth, on December 3, 1998, the NRC issued a new final rule in order to streamline the hearing process for NRC approval of license transfers (63 FR 66721). The TMI-1 license transfer application was the first to be subject to this new hearing process.

Two additional factors further complicated the staff's evaluation of the transfer application. First, a Pennsylvania legislator and an individual who had worked as a security guard at the TMI site submitted comments to the Commission on the proposed license transfer. On February 11, 1999, the Commission issued a memorandum and order (CLI-99-02) that, among other actions, directed the staff to consider these comments. Second, on February 25, 1999, an attorney representing PECO called to indicate that a foreign entity owned approximately 7 percent of PECO voting stock, a fact of which the staff had not been previously aware.

Notwithstanding these complications, the NRR and OGC staffs worked collegially and completed their review on schedule on March 4, 1999, and sent the applicants drafts of the order approving the license transfer, the conforming amendments, and the SER. The applicant filed its comments on the drafts on March 15, 1999. The final order, accompanied by the conforming amendments and the SER, was signed by Roy Zimmerman, Deputy Director of NRR, on April 12, 1999.

## The Pilgrim License Transfer

### Summary of Chronology and Process

In the second announced sale of an entire nuclear plant, on December 21, 1998, the Boston Edison Company (Boston Edison), on behalf of itself and the Entergy Nuclear Generating Company (Entergy Nuclear), applied to the NRC to transfer the OL for Pilgrim. The Pilgrim license transfer had some but not all of the same new policy issues as the TMI-1 license transfer. Like AmerGen, Entergy Nuclear intends to operate Pilgrim as a merchant plant. Also, as discussed subsequently, intervenors requested a hearing under the new license transfer hearing process for the Pilgrim application. However, in Pilgrim, intervenors and applicants settled their differences before the new hearing process was fully invoked. Unlike AmerGen, Entergy Nuclear did not raise substantive foreign ownership, control, or domination issues. Finally, Entergy Nuclear proposed to take over Boston Edison's decommissioning trust fund (which, like the fund for TMI-1, is to be fully funded as part of the terms of the sale) at the time of sale closure, subject to a favorable tax ruling by the IRS. Thus, unlike GPU Energy, Boston Edison would not hold the fund after the license transfer occurs.

As with TMI-1, representatives from Boston Edison began to meet with NRC attorneys and staff advisors in the summer of 1998 to describe the possible sale of Pilgrim. Additional meetings were held subsequently with representatives from Boston Edison and Entergy Nuclear. On December 21, 1998,

Boston Edison and Entergy Nuclear applied for transfer of the Pilgrim license. The application package, although extensive, was about half the size of the TMI-1 application. The staff reviewed the license transfer application package in its acceptance review and submitted an RAI to the applicants on January 22, 1999. The applicants responded to this RAI on January 28, 1999.

Subsequent to publication of the notice of receipt of the Pilgrim transfer application, the NRC received three petitions for intervention: 2 from local labor unions at the Pilgrim site and one from the Massachusetts Attorney General's office. Concurrent with the staff's review of the application, the Commission invoked hearing procedures under the newly promulgated Subpart M of 10 CFR Part 2. However, before actual initiation of a hearing under the new process, the intervenors and Entergy Nuclear were able to reach settlement.

A complicating factor in the review of the Pilgrim transfer was Entergy Nuclear's complex organizational relationship to its parent company, Entergy, Inc., and the initial ambiguity of the source of a \$50 million guarantee that Entergy Nuclear offered to cover operating expenses at Pilgrim that might not be covered by revenues or retained earnings in the event of a prolonged shutdown. The lack of clarity with respect to which Entergy affiliate was guaranteeing this amount resulted in a delay in the staff's issuance of a supplemental information request to determine the financial ability of the previously unidentified financial affiliate to honor the guarantee. This problem, in turn, delayed completion in the financial and legal reviews. Additionally, Entergy Nuclear told the NRC that it could wait for the NRC to complete approval of the transfer until after completion of the refueling outage scheduled to begin on May 8, 1999. However, Entergy Nuclear subsequently indicated on short notice that it needed to receive the NRC's approval of the license transfer by April 30, 1999 because it was closing on the Pilgrim sale that day. The NRC's efforts to accommodate this request further strained NRC staff resources. Entergy Nuclear then decided not to settle the Pilgrim sale on April 30, 1999.

Required information was received and the order approving the Pilgrim license transfer was signed by Samuel Collins, Director of NRR, on April 30, 1999.

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1. Virtually concurrently, OGC submitted SECY-98-246, "Standard Review Plan [SRP] Regarding Foreign Ownership, Control, or Domination of Applicants for Reactor Licenses." Both this draft SRP and the staff's proposed approach to the foreign ownership issue contained in SECY-98-252 were approved, with modification, by the Commission on February 17, 1999. Together, these documents provided the basis for the staff's review of the foreign ownership aspects of AmerGen's application.

2. Some power output from some nuclear plants (e.g., Great Bay Power Company's 12.1 percent share of the Seabrook plant) has not been subject to cost-of-service ratemaking. However, no nuclear plant has had the majority of its electrical output removed from cost-of-service ratemaking.