

August 4, 2006

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

BEFORE ADMINISTRATIVE JUDGE NICHOLAS TRIKOUROS

DOCKETED
USNRC

In the Matter of)
)
Entergy Nuclear Operations, Inc.)
)
(Pilgrim Nuclear Power Station))

Docket No. 50-293

August 4, 2006 (11:18am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

**MASSACHUSETTS ATTORNEY GENERAL'S MOTION
FOR DISQUALIFICATION OF JUDGE NICHOLAS TRIKOUROS**

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.313(b) and 2.323¹, the Attorney General of Massachusetts ("Attorney General") requests that Administrative Judge Nicholas Trikouros disqualify himself from participating as a member of the U.S. Nuclear Regulatory Commission's ("NRC's") Atomic Safety and Licensing Board ("ASLB") for the renewal of Entergy Nuclear Operations Inc.'s ("Entergy's") operating license for the Pilgrim nuclear power plant. Judge Trikouros should disqualify himself because his previous employment by the current applicant, Entergy, to manage a study of spent fuel pools under accident conditions, which is an issue that the Attorney General's contention also raises in this case, would cause a reasonable person to question his impartiality in this proceeding. *Public Service Electric and Gas Company* (Hope Creek Generating Station), ALAB-759, 19 NRC 13 (1984) ("*Hope Creek*").

As required by 10 C.F.R. § 2.313(b) and *Hope Creek*, 19 NRC at 21 n.26, the Attorney General submits his motion to Judge Trikouros rather than the full ASLB. The Attorney General

1 The Attorney General did not consult Entergy or the NRC Staff prior to making this motion pursuant to 10 C.F.R. § 2.323(b) because they are not in a position to resolve the issue raised by this motion.

has not provided an affidavit in support of this motion because the motion is founded on facts presented in a statement by Judge Trikouros himself during a telephone conference among the ASLB and the parties to the Pilgrim license renewal proceeding on July 27, 2006.² *Hydro Resources, Inc.* (2929 Coors Road, Suite 101, Albuquerque, NM 87120), CLI-98-9, 47 NRC 326 (1998).

II. FACTUAL BACKGROUND

On May 26, 2006, the Attorney General submitted a hearing request and petition to intervene in the Pilgrim license renewal proceeding.³ The Hearing Request included a contention challenging the failure of Entergy's Environmental Report ("ER") to address the environmental impacts of severe accidents in the Pilgrim spent fuel pool, including accidents caused by equipment failure, human error, and natural forces, and accidents caused by intentional attacks. The contention presented new and significant information, not considered in the 1996 Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants ("License Renewal GEIS"), showing that the potential for a severe spent fuel pool accident in the Pilgrim high density spent fuel storage pool was significantly greater than considered in the License Renewal GEIS. The significant new information demonstrated that the GEIS had erred in key assumptions, including that (a) total and instantaneous drainage is the most severe condition and (b) aged fuel will not burn. The Attorney General also presented significant new information showing that the environmental impacts of intentional destructive acts against the Pilgrim fuel pool are reasonably foreseeable, and the impacts of a pool fire could be catastrophic.

² The same day, Judge Trikorous also served the parties with a written statement. Disclosure Statement of Judge Nicholas Trikouros Regarding the Pilgrim License Renewal Application ("Disclosure Statement," Exhibit 1).

³ Massachusetts Attorney General's Request for a Hearing and Petition to Intervene With Respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Pilgrim Nuclear Plant Operating License, etc. (May 26, 2006) ("Hearing Request").

The contention charged that Entergy should evaluate the environmental impacts of severe pool accidents in the ER, and the NRC Staff should evaluate them in a Supplemental EIS.⁴

In support of his contention, the Attorney General cited expert reports by Drs. Gordon Thompson and Jan Beyea, and technical studies by the NRC Staff and the National Academy of Sciences (“NAS”). Thompson, *Risks and Risk-Reducing Options Associated with Pool Storage of Spent Nuclear Fuel at the Pilgrim and Vermont Yankee Nuclear Power Plants*, § 2 (May 25, 2006) (“Thompson Report”); Jan Beyea, *Report to the Massachusetts Attorney General on the Potential Consequences of a Spent-fuel Pool Fire at the Pilgrim or Vermont Yankee Nuclear Plant at 21-24* (May 25, 2006) (“Beyea Report”); NUREG-1738, *Final Technical Study of Spent Fuel Pool Accident Risk and Decommissioning Nuclear Power Plants* (January 2001) (“NUREG-1738”); NAS Committee on the Safety and Security of Commercial Spent Nuclear Fuel Storage, *Safety and Security of Commercial Spent Nuclear Fuel Storage* at 53-54 (The National Academies Press: 2006) (“NAS Report”).

By order dated June 7, 2006, the NRC assigned the case to an ASLB panel that included Nicholas Trikouros, Richard F. Cole, and Presiding Officer Ann Marshall Young. The ASLB entertained written responses by Entergy and the NRC Staff to the hearing requests and contentions; heard oral argument regarding the admissibility of contentions on July 6-7, 2006; and conducted an additional briefing regarding the applicability to the proceeding of Regulatory Guide 4.2S-1, *Preparation of Supplemental Environmental Reports for Applications to Renew Nuclear Power Plant Operating Licenses* (September 2000), which interprets the meaning of “new and significant information” under NEPA.

⁴ Pilgrim Watch, an environmental organization, also filed a hearing request and a set of contentions which included an environmental contention seeking National Environmental Policy Act (“NEPA”) consideration of severe accidents in the Pilgrim spent fuel pool.

During a teleconference among the parties and the ASLB on July 27, 2006, the ASLB considered additional oral argument on the admissibility of the petitioners' contentions in relation to Reg. Guide 4.2S-1. At the end of the teleconference, Judge Trikouros read a statement regarding his previous employment with Entergy on a study of spent fuel pool accidents. Later that day he e-mailed a copy of the statement to the parties. Exhibit 1. In his statement, Judge Trikouros disclosed that from early in 2004 to sometime in 2005, he was employed by Entergy Northeast to:

provide best estimate separate effects evaluations of the time available for recovery actions given a loss of coolant from potential malicious acts in an Entergy-owned pressurized water reactor spent fuel pool. Scenarios considered included various degrees of partial uncovering of spent fuel as well as complete drainage of the pool.

Id. Judge Trikouros stated that he provided a "management overview" of the project and "was consulted regarding modeling assumptions and the viability of the results as they progressed."

Id. Judge Trikouros also stated that Entergy provided the NAS with preliminary results from the study in a 2004 presentation, and that he was one of the presenters. According to Judge Trikouros, "statements regarding these presentations were included in support of the findings in Section 3 of the subsequent NAS report entitled 'Safety and Security of Commercial Spent Fuel Storage: Public Report,' which has been referenced in the contentions of the Massachusetts Attorney General and Pilgrim Watch in this case." *Id.*

Judge Trikouros stated that he has "evaluated the impact of [his] involvement" in the Entergy study and has concluded that "a reasonable person, knowing all of the relevant facts and circumstances about [his] work for Entergy, would have no reasonable basis to question [his] impartiality in this case." *Id.* In support of this conclusion, he provided the following rationales:

1. The work was "not associated with the Pilgrim Nuclear Plant nor with any other boiling water reactor." *Id.*

2. The study was performed in an “independent manner using a commonly accepted methodology,” and the study team “had complete freedom to choose the methodology, the modeling inputs and the analysis assumptions.” *Id.*
3. At Entergy’s request, the “final documentation” of the Entergy study was provided to the NRC Staff. *Id.*
4. Judge Trikouros has been associated with “many technical tasks regarding spent fuel pool cooling” throughout his career. His work as a consultant puts him “in a better position to fulfill one of the responsibilities as a Licensing Board Judge, i.e., to review and to question the material presented from a knowledgeable technical perspective.” *Id.*

Judge Trikouros also stated that the circumstances of his employment with Entergy “will not affect [his] impartiality or independence of judgment in this case.” *Id.* He added that he had made the disclosure in order to “avoid the possibility of misunderstanding or misperception.” *Id.*

III. ARGUMENT

A. Standard for Disqualification of NRC Judges

As set forth in *Hope Creek*, the NRC follows 28 U.S.C. § 455’s standards for the disqualification of judges. 19 NRC at 20. *See also Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), CLI-82-9, 15 NRC 1363, 1365-67 (1982) (ASLB judges are governed by the same disqualification standards as federal judges).* Relevant portions of Section 455 provide that:

- (a) Any justice, judge, or magistrate⁵ of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned.

5 In 1990 the term “magistrate” was changed to “magistrate judge.” Pub.L. 101-650.

(b) He shall also disqualify himself in the following circumstances:

(1) Where he has a personal bias or prejudice concerning a party, or personal knowledge of disputed evidentiary facts concerning the proceeding;

* * *

5. No justice, judge, or magistrate shall accept from the parties to the proceeding a waiver of any ground for disqualification enumerated in subsection (b). Where the ground for disqualification arises only under subsection (a), waiver may be accepted provided it is preceded by a full disclosure on the record of the basis for disqualification.

See Hope Creek, 19 NRC at 20.

In *Hope Creek*, the Appeal Board found that 28 U.S.C. § 455(a) required disqualification of an ASLB judge from an operating license proceeding where the judge had been employed by the applicant a decade earlier to assist with its construction permit application. The Appeal Board found it “simply idle to suggest that a reasonable person could not entertain the suspicion that, because he had played a role in the obtaining by Public Service of a construction permit for Hope Creek, [the judge] might be partial to the current endeavor to acquire an operating license for it.”

Id.

B. Judge Trikouros Should Disqualify Himself Because His Actions Would Cause a Reasonable Person to Question his Impartiality.

Pursuant to 28 U.S.C. § 455(a), Judge Trikouros should disqualify himself because the circumstances of his previous employment with Entergy would cause a reasonable person to question his impartiality in this proceeding. Like the judge disqualified in *Hope Creek*, Judge Trikouros previously was employed by the same corporate entity whose license renewal application he is being asked to judge in this proceeding. The subject of his work for Entergy was the same as the subject of the Attorney General’s contention, *i.e.*, the potential for severe accidents in spent fuel pools, including accidents caused by “potential malicious acts.” Exhibit 1. Moreover, the Entergy study on which he worked is discussed in one of the key technical

reports the Attorney General relies on for his contention, the NAS Study.

Based on this information, a reasonable person would question Judge Trikouros' impartiality in several respects. Having conducted, at least in part, the same type of spent fuel pool accident risk analysis sought by the Attorney General in his contention, Judge Trikouros could reasonably be thought to have formed an opinion on the merits of conducting such an analysis. It is reasonable to presume that Judge Trikouros has pre-judged the merits of the Attorney General's contention with respect to the value of amending Entergy's ER to consider the potential for a fire in the Pilgrim pool. Such a pre-judgment could affect Judge Trikouros' impartiality at the contention admission stage and the merits stage of the proceeding.⁶

As Judge Trikouros asserts in his Disclosure Statement, he previously was employed as a consultant to Entergy on this very issue. Given his education and professional background, it is not unlikely that Judge Trikouros would again seek employment as a consultant to Entergy. Therefore, a reasonable person would conclude that Judge Trikouros' impartiality is subject to question.

The reasons Judge Trikouros provides for failing to disqualify himself are not persuasive. First, Judge Trikouros asserts that the work he performed was not specifically associated with the Pilgrim nuclear power plant or with boiling water reactors ("BWRs"). But the NAS Study did not find this distinction important. For example, the NAS Study commented that the Entergy results were "similar" to a Sandia study that had examined a reference BWR. *Id.* at 50, 54. The NAS Study also found that Entergy and other organizations had provided a "general understanding" of spent fuel behavior in a loss-of-pool coolant event. *Id.* at 58. Thus, the

⁶ At some point in the proceeding Judge Trikouros' personal knowledge about the Entergy study may become the subject of an actual evidentiary dispute, which would also require his disqualification under 28 U.S.C. § 455(b).

principal focus of the Entergy study appears to have been its general insights into spent fuel pool behavior under accident conditions.

Judge Trikouros also states that the Entergy study “was performed in an independent manner using a commonly accepted methodology.” As discussed above, however, a reasonable person would question a consultant’s independence with respect to his employer, especially where that consultant might be eligible for future contracts with the client. While the Attorney General has no reason to believe that Judge Trikouros is in fact biased in this regard, the standard under 28 U.S.C. § 455(a) simply requires that Judge Trikouros’ impartiality might reasonably be questioned.

In addition, while Judge Trikouros may have employed commonly accepted methodologies, it is clear from the NAS Study that as manager of the Entergy study he had to make a number of significant choices about the assumptions used in the study. As the NAS Study observes, the Entergy study had “important limitations,” including limiting assumptions about spent fuel pool thermal behavior and the behavior of fuel under attack. *Id.* at 56. Thus, Dr. Trikouros made significant choices about assumptions and inputs unique to the Entergy analysis. While Judge Trikouros asserts that he had “complete freedom” with respect to the choice of these assumptions, it appears that some of the choices may have been based on the cost of doing a more sophisticated analysis, *i.e.*, “more powerful computers” would have been required. NAS Study at 58. In addition, a reasonable person would question whether some assumptions were made in order to obtain a result more favorable to Entergy. For example, the NAS Study appears to criticize Entergy for failing to assume the use of heavier, commonly used aircraft in an attack. *Id.* at 56.

Finally, Judge Trikouros asserts that the “final documentation” of the Entergy study was

provided to the NRC Staff. However, that is irrelevant to the issue of disqualification, and in any event he has not made the study available to the parties.

IV. CONCLUSION

For these reasons, Judge Trikouros should disqualify himself from further participation in this proceeding as a member of the ASLB.

Respectfully submitted,



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August 4, 2006

**DISCLOSURE STATEMENT OF JUDGE NICHOLAS TRIKOUROS
REGARDING THE PILGRIM LICENSE RENEWAL APPLICATION**

I am placing this statement in the record of the Pilgrim boiling water reactor License Renewal proceeding in order to provide full disclosure of certain information which may be perceived to be a conflict of interest in this proceeding.

Early in 2004, Panlyon Technologies, of which I was a Principal, was commissioned by Entergy Northeast to provide best estimate separate effects evaluations of the time available for recovery actions given a loss of coolant from potential malicious acts in an Entergy-owned pressurized water reactor spent fuel pool. Scenarios considered included various degrees of partial uncovering of spent fuel as well as complete drainage of the pool. While I was not the principal investigator, I did provide a management overview of the project and was consulted regarding modeling assumptions and the viability of the results as they progressed. The work was completed in 2005.

Entergy provided preliminary results from this work in a presentation to the National Academy of Sciences (NAS) in Wash D.C. on May 10, 2004, in which I participated as one of several presenters. I have had no other communications with the National Academy prior to or since that day. As it turned out, statements regarding these presentations were included in support of the findings in Section 3 of the subsequent NAS report entitled "Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report," which has been referenced in the contentions of the Massachusetts Attorney General and Pilgrim Watch in this case.

I have evaluated the impact of my involvement in the technical effort described above and I have concluded that a reasonable person, knowing all of the relevant facts and circumstances about my work for Entergy, would have no reasonable basis to question my impartiality in this case. The work was not associated with the Pilgrim Nuclear Plant nor with any other boiling water reactor.

The study was performed in an independent manner using a commonly accepted methodology. We had complete freedom to choose the methodology, the modeling inputs and the analysis assumptions. At Entergy's request, the final documentation of this work was provided to the NRC Staff.

This was just one of many technical tasks regarding spent fuel pool cooling that I have been associated with throughout my career. The background understanding I bring to my current adjudicatory role was generated in part by carrying out consulting work for more than a dozen clients in the nuclear industry, including Entergy. This work put me in a better position to fulfill one of the responsibilities as a Licensing Board Judge, i.e., to review and to question the material presented from a knowledgeable technical perspective.

The above circumstances will not affect my impartiality or independence of judgment in this case, but I have concluded that disclosure was necessary to avoid the possibility of any misunderstanding or misperception.

CERTIFICATE OF SERVICE

I certify that on August 4, copies of the foregoing Massachusetts Attorney General's Motion for Disqualification of Judge Nicholas Trikouros were served on the following by first-class mail and/or electronic mail, as indicated below:

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