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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20565-0001

October 1, 1996

EA 95-009
Thermal Science, Inc.
ATTN: Mr. Rubin Feldman
President
2200 Cassens Drive
St. Louis, Missouri 63026

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES -
\$900,000

Dear Mr. Feldman:

The enclosed Notice of Violation and Proposed Imposition of Civil Penalties (Notice) is being issued to Thermal Science, Inc. (TSI), for violations of NRC requirements committed in representations made by TSI to the NRC concerning Thermo-Lag 330 or 330-1 fire barrier products. These representations were made in response to concerns about Thermo-Lag raised by the NRC in both oral and written communications with TSI. The NRC has determined that in making these representations, TSI engaged in deliberate misconduct as defined in 10 CFR §50.5, "Deliberate Wrongdoing." The specific actions which constitute these violations are set forth in the enclosed Notice.

The misconduct consisted of TSI deliberately providing inaccurate or incomplete information to the NRC concerning TSI's fire endurance and ampacity testing programs. The NRC's regulations, specifically 10 CFR §50.5, prohibit a contractor of a NRC licensee from deliberately submitting information to the NRC that the contractor knows to be incomplete or inaccurate in some respect material to the NRC. Contrary to this requirement, TSI deliberately provided inaccurate information to the NRC by two general methods: (1) TSI directly misrepresented the level of involvement of a test laboratory, Industrial Testing Laboratories, Inc. (ITL), in fire barrier and ampacity derating tests on Thermo-Lag products in both oral and written statements to the NRC and; (2) TSI indirectly misrepresented the respective levels of involvement of TSI and test laboratories, including ITL, in the testing of Thermo-Lag products when it provided test reports and other documents to the NRC that it knew contained inaccurate and/or incomplete information.

The first submission of inaccurate and/or incomplete information, which is the subject of this enforcement action, was in a TSI letter dated October 5, 1991, which responded to an NRC letter dated September 10, 1991. Both the October 5th letter and its attachments responding to specific NRC questions contain deliberate misrepresentations which are designated as Violation I.A in the enclosed Notice. These misrepresentations include statements by TSI that 1) Thermo-Lag products had been subjected to independent testing; 2) TSI had no knowledge of deviations from its installation procedures; and 3) Underwriter's Laboratories (UL) had total control of ampacity testing performed at UL facilities and that these test results were the "most conservative data" available to TSI. Contrary to TSI's representations, the NRC's review has

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determined that: (1) Thermo-Lag product testing was actually performed by TSI with only minimal involvement of ITL; (2) TSI had knowledge of installation deviations occurring at licensee facilities; and (3) the ampacity derating tests performed at UL were not under the total control of UL and the data presented by TSI concerning these tests was not "the most conservative data" available to TSI.

The second submission of inaccurate information that is covered by this proposed enforcement action occurred in a meeting at NRC Headquarters on October 17, 1991, and consisted of deliberately inaccurate and/or incomplete oral statements made by Mr. Rubin Feldman to NRC staff members concerning Thermo-Lag fire barrier tests. These inaccurate statements are designated as Violation I.B in the enclosed Notice. Again, the inaccurate information consisted of TSI misrepresenting the respective levels of involvement of TSI and ITL in the fire barrier and ampacity derating tests on Thermo-Lag products.

The remaining instances of TSI deliberately providing inaccurate and/or incomplete information to the NRC are designated as Violations I.C through I.I in the enclosed Notice. These instances reflect a pattern of written and/or oral representations concerning test results and testing methods or the submittal of test reports that contained a broad spectrum of inaccurate and/or incomplete information.

For example, in response to several NRC requests for information, TSI deliberately submitted test reports which were represented as having been prepared by ITL when, in fact, they had actually been prepared by TSI with an ITL representative merely witnessing the test and verifying the furnace temperature readouts. In addition, these reports contained falsified documents which were submitted to the NRC to support TSI's claim that ITL had independently tested Thermo-Lag products. These falsified documents included daily log sheets and other quality assurance documents onto which a copy of an ITL representative's signature had been photo-copied, deliberately misrepresenting the role of ITL in various test-related activities. Moreover, on two occasions TSI submitted reports to the NRC that alleged that the ITL representative at the test was a Professional Engineer when TSI knew that this statement was false. See Violations I.C, I.D, and I.I.

Furthermore, in written statements to the NRC, TSI deliberately misrepresented the roles of two other test laboratories that performed tests on Thermo-Lag. For example, on three occasions TSI represented to the NRC that tests at the Omega Point Laboratories (OPL) had been under OPL's "total control." On another occasion, TSI represented to the NRC that ampacity testing performed at Underwriters Laboratories (UL) was performed under UL's "total control." However, TSI knew that neither OPL nor UL had total control of their respective test programs. See Violations I.E, I.F, I.G, and I.H.

Following a review of the inaccurate information deliberately submitted by TSI in: (1) the October 5, 1991 letter; (2) the October 17, 1991 meeting; and (3) other letters and test reports subsequently submitted by TSI as described in the Notice, the NRC has concluded that this information was material to an

issue within the NRC's jurisdiction. As more fully explained in the Notice, this information was material to the NRC because it was provided to the NRC in order to alleviate concerns about the quality and adequacy of Thermo-Lag material, which NRC power reactor licensees relied upon to satisfy the requirements of 10 CFR §50.48 and 10 CFR Part 50, Appendix R, and conditions in their own operating licenses; and thereby influencing the need for, and nature of, any regulatory action taken by the NRC directed toward its licensees.

Moreover, compliance with these regulations is not just an end in itself. Instead, compliance is a significant step in the NRC's responsibility to maintain adequate protection of public health and safety. Accordingly, the NRC considers it unacceptable that TSI deliberately misrepresented the independence of the fire barrier and ampacity testing as a response to NRC concerns about the quality and performance of Thermo-Lag when TSI was fully aware that (1) no such independence existed and (2) the NRC would place substantial weight on information that it believed was obtained from truly independent testing.

Based on its review, the NRC has concluded that these deliberate misrepresentations constitute violations of 10 CFR §50.5. Violations involving multiple instances in which a vendor deliberately provides inaccurate and/or incomplete information related to the performance and quality of its important-to-safety products, constitute a very significant regulatory concern, are wholly unacceptable, and will not be tolerated. These violations are further aggravated because they were committed in the context of an ongoing NRC investigation into concerns about the quality and performance of Thermo-Lag products with significant implications regarding the compliance of a substantial number of nuclear power plant licensees with the Commission's regulations. These representations were provided after specific concerns were raised by the NRC staff about the nature of the testing that was performed to qualify Thermo-Lag products for use in nuclear power plants. Furthermore, these representations were made to the NRC in an apparent attempt to convince the NRC that impartial, independent test laboratories with no financial interest in Thermo-Lag had evaluated this product and had confirmed TSI's published claims of Thermo-Lag's fire barrier capabilities. Therefore, Violations I.A through I.I in the enclosed Notice have each been classified as Severity Level I violations in accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600.

Under the NRC's Enforcement Policy, a base civil penalty in the amount of \$10,000 is normally considered for a Severity Level I violation involving a licensee contractor. In arriving at the decision to propose an appropriate remedial sanction for the significant number of violations in this case, the NRC considered the egregious, deliberate, and repeated nature of these violations. For example, TSI continued to provide inaccurate information in the form of additional test reports and letters concerning testing activities during the 1992 calendar year, long after having been informed of the NRC's concerns about the adequacy of Thermo-Lag products in letters, meetings, and a formal inspection report.

Moreover, as noted in the attached Notice, many of the test reports that NRC determined contained inaccurate information dated from the early 1980's. During that period of time, NRC licensees, using alleged "ITL" test reports as a basis for judging product quality and serviceability, installed fire barriers constructed of Thermo-Lag in order to satisfy the requirements of 10 CFR §50.48 and 10 CFR Part 50, Appendix R, as well as specific conditions in many of the individual plant operating licenses. In turn, the NRC accepted these fire barriers as meeting its Fire Protection requirements and Guidelines. For some plants, these barriers formed a part of the plant's licensing basis and their adequacy was relied on when the NRC made its decision to issue an operating license for those plants. However, the NRC has determined that the use of Thermo-Lag products resulted in a degradation in the required fire safety margins and an increase in the potential consequence a fire could have on plant safety. Thus, supplying insufficiently tested Thermo-Lag to NRC reactor licensees not only placed those licensees in jeopardy of being in violation of NRC regulations, but also resulted in a compromise of the level of plant fire safety. Because the misrepresentations cited as Violations in the enclosed Notice were submitted in support of these earlier misrepresentations, they have a very high regulatory significance.

Those facts, in conjunction with the monetary benefit that TSI received by the marketing of inadequately tested Thermo-Lag 330-1 products to NRC licensees, constitute a very significant regulatory concern which requires that the NRC take a significant enforcement action in this case. Therefore, in order for TSI to understand the magnitude of NRC concern that TSI's actions are unacceptable for a licensee contractor and to provide TSI an appropriate incentive to ensure that it provides the NRC complete and accurate information in the future, the NRC has decided to utilize its full civil penalty authority under the Atomic Energy Act by invoking enforcement discretion in accordance with Section VII.A of the NRC's Enforcement Policy and escalate the civil penalty to the maximum statutory limit of \$100,000 for each of the 9 Severity Level I violations. Thus, the total civil penalty for this action will be \$900,000, if fully imposed.

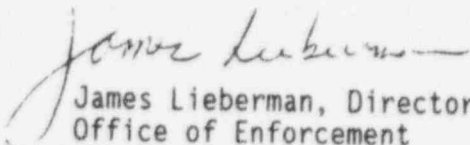
You are required to respond to this letter and the enclosed Notice and should follow the instructions specified in the Notice when preparing your response. As explained more fully in the Notice, you should document in your response the specific corrective actions already taken, any additional actions you plan to take in order to prevent recurrence of these violations, and any other reasons you believe that the NRC should not impose this proposed civil penalty. After reviewing your response to this Notice, including any proposed corrective actions, the NRC will determine whether to impose the full civil penalty as proposed, impose a reduced civil penalty, or retract the proposed civil penalty altogether. If the NRC issues an order imposing a civil penalty, you will be provided an opportunity to request a hearing under the provisions of 10 CFR §2.205 and 10 CFR Part 2, Subpart G.

Thermal Science, Inc.

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In accordance with 10 CFR §2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be placed in the NRC Public Document Room (PDR). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction.

Sincerely,


James Lieberman, Director
Office of Enforcement

Enclosure: As Stated