

NUCLE DYNE

ENGINEERING CORPORATION

EDO-06317

728 West Michigan Avenue
Jackson, Michigan 49201

May 14, 1979

Represented by
O. B. Falls, Jr.
Consultant

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

The energy supply situation in our country needs immediate attention to prevent electrical and economic blackouts in the near future which could lead to extreme hardships to homelife and business. Majority public opinion supports nuclear power as a necessary energy source.

The country needs a firm, definitive statement of support and encouragement by President Carter, Energy Secretary Schlesinger and the several Congressional Committees, having an interest in our energy policy and supply, as a basis for rejuvenation of the nuclear power industry. Also, there is a current need for substantial safety improvements for light-water reactor (LWR) power plants. Consequently, we sent a Mailgram to President Carter with copies to Secretary Schlesinger and NRC Chairman Joseph Hendrie. A copy of this Mailgram is enclosed. We would call your attention to the references to the Three Mile Island incident. Your known interest in the energy situation in our country has prompted us to write to you.

To support the claims made in the Mailgram a NucleDyne document is enclosed. This is a copy of a paper presented at the American Power Conference in Chicago on April 24, 1979; "Passive Containment System - A New Concept to Solve Safety Concerns". This paper responds specifically to the five safety research projects recommended to the Congress by the NRC in Report NUREG-0438, dated April 12, 1978. Also, some of the benefits that are derived from a licensed nuclear power plant with the new safety features are enumerated in the enclosed "Application of the PCS produces the following results". Extra copies of these publications are available on request.

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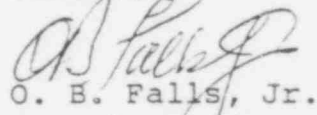
Mr. Harold Denton

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The PCS incorporates the substantial improvements needed for the LWR power plants. We request your urgent attention to our claims as stated in the Mailgram and discussed in the enclosed document. Furthermore, we request an opportunity to visit you to validate our claims. Your support in the application of these safety improvements will enable the LWR power plants to become a viable basic source of energy. This, in turn, may encourage President Carter and others to a firm statement in support of nuclear power.

We await your response to our request to meet with you.

Sincerely


O. B. Falls, Jr.
Consultant

OBF/mr
Enclosures

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MAILGRAM SERVICE CENTER
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 Mailgram

4-043031E127002 05/07/79 ICS IPMBNGZ CSP LSG8
1 5177874742 MGM TDRN JACKSON MI 05-07 0207P EST

NUCLEDYNE ENGINEERING CORP
728 WEST MICHIGAN AVE
JACKSON MI 49201

THIS MAILGRAM IS A CONFIRMATION COPY OF THE FOLLOWING MESSAGE:

5177874742 MGM TDRN JACKSON MI 187 05-07 0207P EST

ZIP

JIMMY CARTER, PRESIDENT UNITED STATES OF
AMERICA

WHITE HOUSE DC 20500

THREE MILE ISLAND (TMI) INCIDENT NECESSITATES URGENT ATTENTION TO NEW
DESIGN CONCEPTS THAT IMPROVE SAFETY OF PRESENT AND FUTURE NUCLEAR
PLANTS.

NRC HAS KNOWN FOR MORE THAN THREE YEARS OF THE UNIQUE PASSIVE
CONTAINMENT SYSTEM, (PCS) FOR LIGHT WATER REACTOR (LWR) PLANTS WHICH
WOULD HAVE PREVENTED CORE DAMAGE AND THE RELEASE OF RADIOACTIVITY UNDER
TMI CONDITIONS; PLANT RECOVERY WOULD HAVE BEEN IMMEDIATE. PCS RESPONDS
TO SAFETY RESEARCH PROJECTS/TOPICS RECOMMENDED IN NRC REPORT TO
CONGRESS, NUREG-0438.

NRC REFUSES CONSIDERATION OF THIS NEW CONCEPT ON GROUNDS SAFETY
EVALUATION IS TOO DEMANDING FOR AVAILABLE NRC STAFF. RECENT ADVERSE
EVENTS FOCUS ATTENTION ON THE NEED FOR NEW SAFETY CONCEPTS FOR NEXT
GENERATION OF LWR NUCLEAR PLANTS WHICH ELIMINATE POSSIBILITY OF
ANOTHER TMI TYPE INCIDENT.

WE SOLICIT YOUR SUPPORT OF ACTION BY NRC AND DOE TO REVIEW PCS SO
INDUSTRY IS ASSURED OF TIMELY REGULATORY LICENSING OF PLANTS USING PCS.
A MEETING IS REQUESTED WITH APPROPRIATE MEMBERS OF YOUR STAFF AND
COMMITTEES INVESTIGATING TMI INCIDENT TO FULLY VALIDATE CLAIMS
REGARDING PCS FOR NEW PLANTS AND RETROFIT OF PCS EMERGENCY CORE
COOLING SYSTEM ON EXISTING PLANTS.

NUCLEDYNE ENGINEERING CORP
BY O B FALLS JR, CONSULTANT

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A PASSIVE CONTAINMENT SYSTEM

for

LIGHT-WATER NUCLEAR REACTORS

Application of the PCS produces the following results:

1. Makes possible vacuum containment of the design basis loss-of-coolant accident (LOCA) including core reflood and decay heat removal with no instrumentation, controls and interlocks and no external sources of energy required - electrical, mechanical or otherwise; it is a completely automatic, hands-off system; the engineered safety features are entirely passive.
2. Flooding of the primary reactor containment above any postulated reactor coolant system pipe break provides protection for reactor vessel failure.
3. Complete protection against so called Class 9 accidents including core melt, steam explosions and containment overpressure.
4. Improved innovative passive protection against external events; including such extreme actions as war or sabotage; a single bunkered structure houses all safety related systems and components with sufficient stored heat sink capacity within primary containment for cold shutdown.
5. Enables cold shutdown on loss of normal and auxiliary feedwater without fuel damage or release of radioactivity to environment; plant recovery is immediate.
6. Prevents potential fires; (a) passive systems and components not subject to burning; (b) active reactor components operate in an inert gas atmosphere; (c) separation of redundant control, interlock and electric cable systems and components provides fire damage protection in depth; (d) individual enclosures for reactor auxiliary systems can be blanketed with inert gas, water sprays or deluge systems.
7. Major improvements in seismic response; particularly applicable in areas potentially subject to high earthquake forces; only one Seismic Category I structure is required.

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8. Substantial volume reduction in Seismic Category I structural requirements lends itself to imbedding of the reactor building with or without a berm, or complete undergrounding.
9. Responds to safety research projects and topics recommended to Congress in NRC Report, NUREG-0438, dated 4/12/78.
10. Resolves all unresolved generic items having to do with containment and emergency core cooling systems (ECCS) for LWR's as identified by the Advisory Committee on Reactor Safeguards (ACRS) in Report No. 5, dated February 24, 1977.
11. A substantial reduction in plant construction time; major equipment items are not on the critical path.
12. Plant construction cost studies show savings of 10 to 15% in total plant other than the turbine-generator building.
13. Provides substantially improved inservice maintenance and inspection for improved plant availability. With passive systems the need is eliminated for periodically checking out instrumentation, controls, interlocks, rotating or mechanical equipment, electric or mechanical power, or operator action for the LOCA. In that passive systems are essentially static for the life of the plant, the maintenance is minimal.
14. Containment permits retrofit of reactor coolant system with new and improved components making plant decommissioning unnecessary.
15. Double containment of all potential energy and radioactivity releases makes possible the siting of plants near load centers to make possible the use of thermal energy for residential and industrial heating (cogeneration).

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