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OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

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Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555
Attention: Docketing and Service Branch

Dear Secretary Chilk;

Please accept this letter as my comments on the Petition for rulemaking: notice of receipt from the Ohio Citizens for Responsible Energy dated May 26, 1989. The Ohio Citizens for Responsible Energy has a long history of pointing out safety hazards of nuclear power. They have been pointing out these hazards long before the disasters at Chernobyl and Three Mile Island proved the correctness of their stands. This latest petition published in the July 25, 1989, Federal Register at Page 30905 continues a history of attempting to assure the safety of nuclear.

The present petition centers on the danger poised by "thermal hydraulic instability of BWRs." The dangers of thermal hydraulic instability were well known for many years. Richard E. Webb, Ph. D., discussed the possibility of runaway reactors in his classic book, "The Dangers of Nuclear Power." Dr. Webb estimated that a reactor could experience a runaway reaction producing energies eleven times greater than the design basis. Chernobyl showed that Dr. Webb's figures were very possible: it happened.

The hydraulic instability accident is only one of a great number of possible and actual accidents which can endanger the health and safety of the public. The recent findings of the inappropriately certified materials suggest that the reactors are not built as specified and designed. Problems with valves suggest that the reactors are sensitive to a type of accident called "Interfacing Systems Loss of Coolant Accident," (ISL). In response to the dangers of ISLs, I have sent the enclosed letter warning activists of the dangers of ISLs and the deficient manner with which the NRC has approached the subject.

The way that thermal hydraulic instability has been neglected by the NRC is only a symptom and not the disease. The disease is that the entire spectrum of possible accidents have been ignored by the NRC instead of giving these accidents proper airing and exhaustive repair.

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The deficient way that the NRC approaches these accident scenarios mirrors the way that the NRC approaches this rulemaking. Despite the many deficiencies which have arisen in the nuclear industry, the NRC limits this petition for rulemaking on the broad and vital subject of Anticipated Transient Without Scram to one small aspect: thermal hydraulic instability. The NRC assumes that the reactor will be built and maintained according to NRC directives with defense in depth. The recent findings of counterfeit materials, unqualified valves, discrepancies between as-built and design drawings mock any assumption that the reactors are built with defense in depth. The NRC continues to approach all these woes with an attitude that accidents can't happen.

The history of TMI#1, Chernobyl, LaSalle and a thousand and one dangers do little to make the NRC respond. The NRC seems to hear only the primacy issue which is embodied in the introduction to the 1954 Atomic Energy Act without considering the nine times that the "health and safety of the public" is referred to in the same Act. The Charter of the NRC also bears little weight upon the NRC when it refers to the health and safety of the public.

My request is simple and is directed to the NRC: What and how will make the NRC respond to protecting the health and safety of the public?

Respectfully submitted,

Marvin I. Lewis, P.E.

Marvin I. Lewis, R. P. E.
9-25-89.

ENCLOSURE

Marvin I. Lewis, P. E.
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Dear Activist;

The Chernobyl Accident started as a steam explosion 45 seconds after coolant was injected onto a hot, uncovered core. This accident is different from any design basis accident used in U. S. nuclear plants. The difference is obvious.

The accident description used in the design of US plants assumes that a steam explosion will occur only after a core melt. For the core to melt requires that the accident proceed for 2700 seconds (35 minutes) without an adequate operator response. Chernobyl experienced a steam explosion 45 seconds after voiding its coolant. 2700 seconds may give an operator time to avoid a core melt, but 45 seconds is not enough time to stop an accident.

The Chernobyl Accident can happen at many U. S. nuclear plants. Many of the design differences between U. S. plants and Chernobyl have nothing to do with stopping a Chernobyl-like steam explosion. On the following pages, I describe a Chernobyl-like steam explosion which can happen at many U. S. plants. The result can be as disastrous as the Chernobyl Accident.

This explanation involves only one set of deficiencies. Nuclear power plants have many deficiencies, and thru a recent ruling in the Limerick II Hearings, many nuclear license hearings can be reopened. Please contact me for information on how you can find contentions to argue before the NRC, and stop the plant near you from operating and endangering you and yours.

With hope for a bright future,

Marvin I. Lewis 9/25/89.

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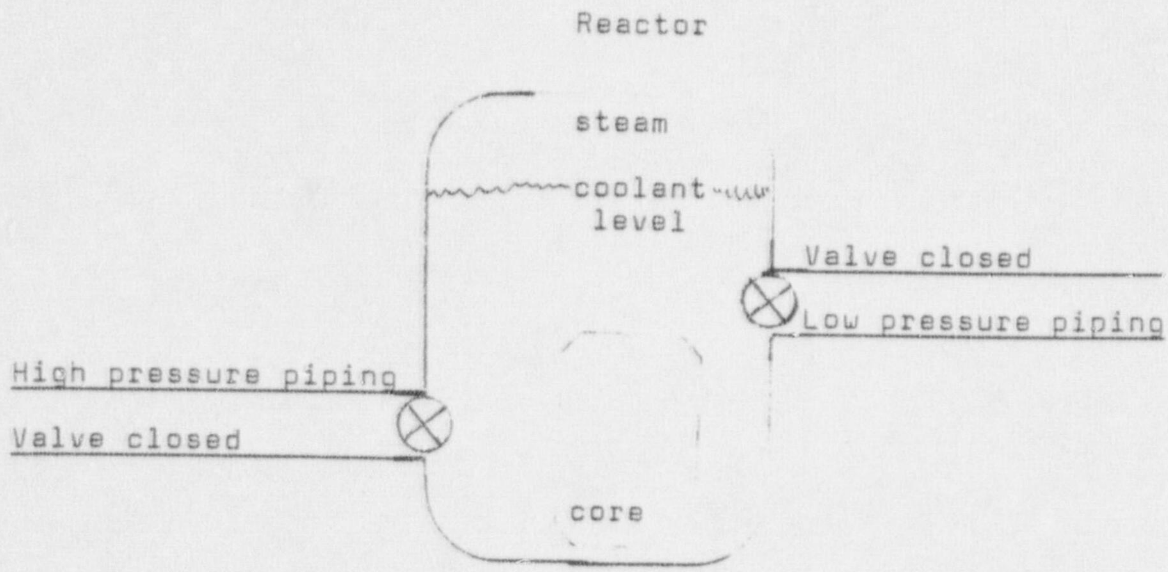
The Chernobyl Connection

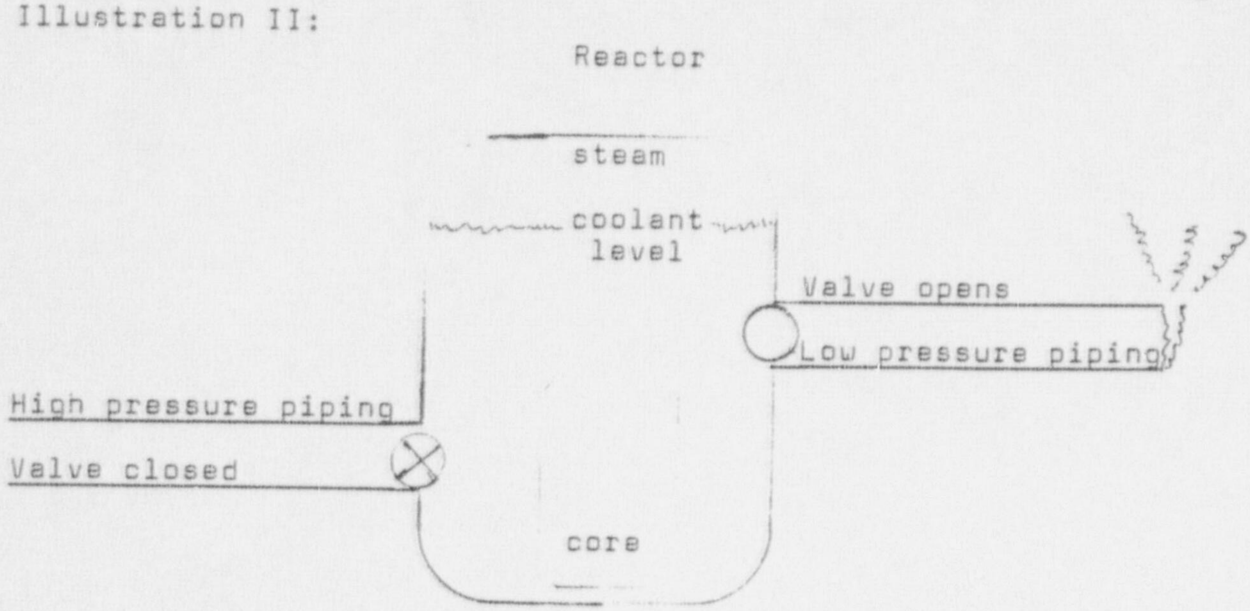
Illustration I:



High pressure reactor coolant system

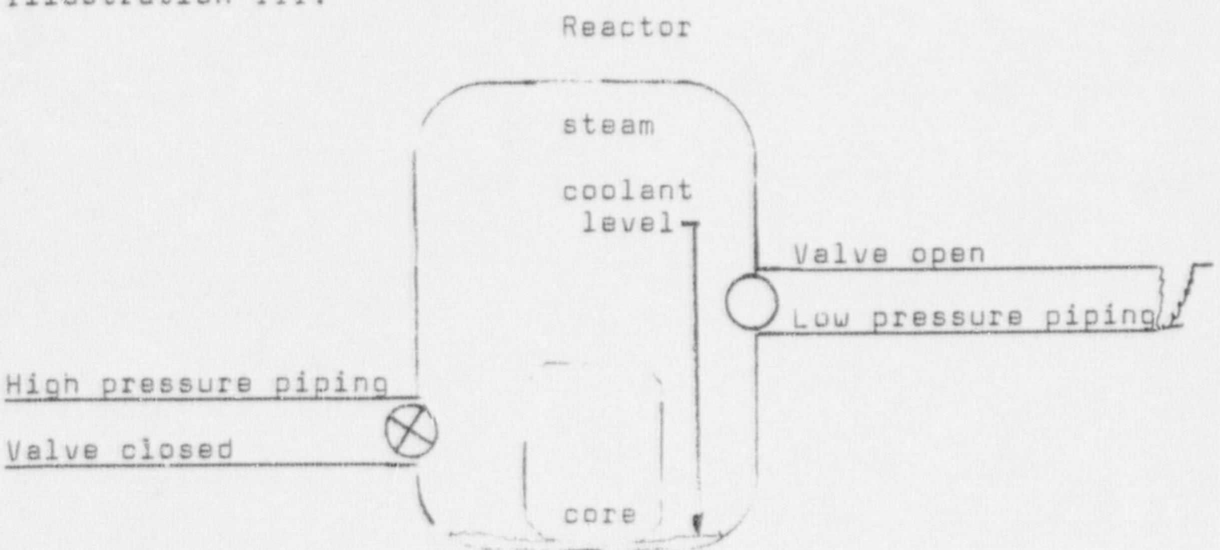
-A light water reactor is producing electricity .
-Coolant covers the core and steam fills the remainder of the high pressure coolant system.
-Closed valves are shown as ⊗, and open valves are shown as ◯ .

Illustration II:



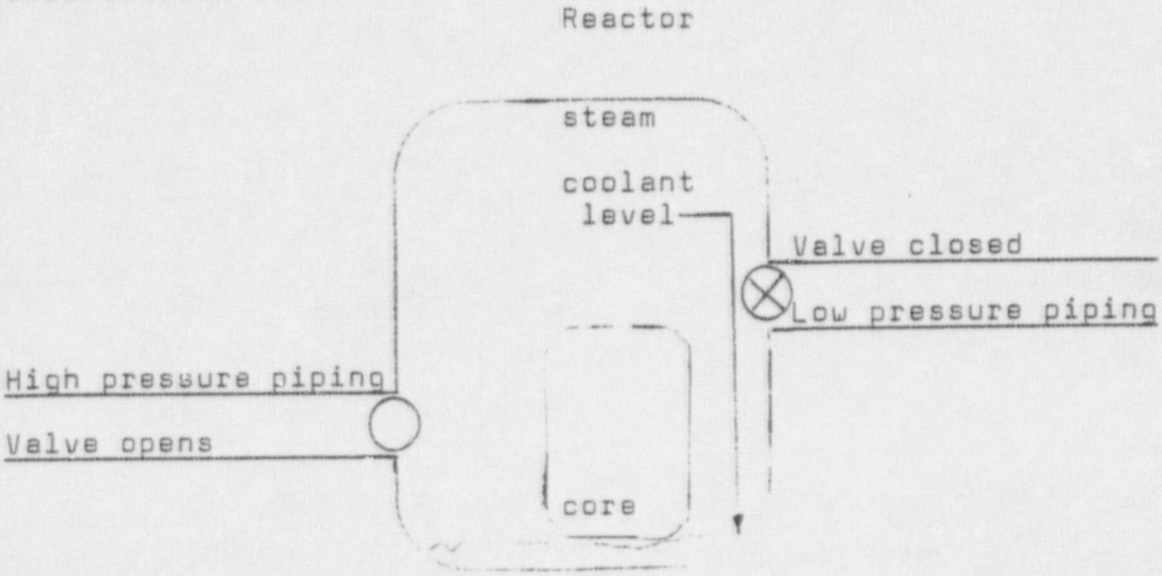
-The valve or valves separating the low pressure piping from the high pressure system reactor coolant system opens.
-The high pressure in the reactor surges into the low pressure piping.
-The high pressure reactor coolant system can withstand higher pressure than the low pressure piping.
-The low pressure piping has too thin a wall to contain the high pressure and breaks.

Illustration III:



-The coolant turns to steam and discharges thru the break in the low pressure piping until the core is uncovered.
-The core overheats due to the lack of coolant to cool it properly.

Illustration IV:



-The valve on the low pressure piping closes.
-The valve on the high pressure coolant supply opens.
-The coolant under high pressure floods the hot, uncovered core.
-The coolant flashes explosively upon contact with the overheated core.

The effect of this energy release can be as destructive as the steam explosion at Chernobyl.