June 20, 1979
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Gentleman;

I have just finished reading a copy of an article titled "The Three Mile Accident" from the April issue of "Science News". Now I suppose I know more than the average person on the street but am by no means one of those "sheepskinned lined engineers" both NRC and the Power Companies brag about-but even with my knowledge and experience, based on what I read, I could see gross errors and pure flagrant violations of all that is written on nuclear Safety!

I spent 12 years in a Nuclear Program that with its one accident did less damage than TMI and involved totally less radiation and exposure to people. I was in the Army Nuclear Power Program and was qualified as a Nuclear Shift Supervisor on two Pressurized Water Plants, I was a Reactor Operator on a Gas Cooled Plant and was the Radiological Control/Health Physicist at all three installations. I was involved with Enviromental studies at all of the sites and was involved in decommissioning (mothballing) and completely sealing up two of them. I've operated Reactors, Power Plants and also been responsible for Shipping Spent Fuel and high and low level waste along with day to day Radiological Safety programs - so I guess like me my experiance is well rounded.

Because of this when I read the article I could not help but note many many obvious errors, faults, and problems with the whole situation and I would like you to look at my questions

and see if you do not agree and perhaps we can get some answers.

Enclosed are questions and problems I noted just from the article - accurate or not this is what I saw - How do you see it?

Most Repectfully,

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QUESIONS

1. What is wrong with the Secondary Water Quality to require a full flow Demin. in the BF system? Water Chemistry?
   A) Why not use a Demin./Bypass flow system to prevent flow failure, boiling SG dry? Design?

2. Procedural problem - <u>at each startup</u> all Aux./Backup systems operationally checked <u>by operating</u>.
   A) This checks backup instrumentation and functional ability of system. Procedure?

3. Operating pressure span too close to SCRAM/safety lift pressures. Consider lowering loop T(avg) for safety this should not overly effect output. Procedure?

4. Pressurizer relief surge tank problem.
   A) Should be empty during Opr.(minimum heat sink)
   B) Should have an operational reliable 2 alarm system on level Suggest 1/2 and 3/4 full alarm, Procedure and Design?
   C) Along with level alarm a pressure alarm also to denote filling and pressurizing to alert CRO. Design?
   D) Surge tank should hold Approx. same as loop pressure prior to disc rupture - allows time for the operator to make corrective action. Design?
   E) Procedure/Functional addition - insert a reliable open/close Hi pressure valve between Safety and surge tank - Procedure at ½ or 3/4 level alarm secure valve to close system. Design?

<u>Procedural</u>- Have a BF/Demin. manual By-pass to allow flow into SG to maintain level and use as a heat sink. Design?

<u>Procedural</u>- Opr. error-Pressurizer Hi level without corresponding pressure increase sign of instrument error- a full pressurizer W/Safety open no big deal. Procedure?

<u>Instrument</u>- Use more than one Pressurizer level instrument system-one using not an open upper reference leg but a calibrated closed leg. Design?

<u>Operational</u>- With ECCS <u>on</u> and water in SG cooling, loop pressure/Temp reduced no flashing problem.

<u>NRC Error</u>-Containment Violation during Reactor problems- ability of system to pump contaminated water if pressure less than set point (too little restriction) this should also be linked to some safe reduced loop temperature.

<u>Operational/Procedural</u>- Waste water tanks and building.

1. Each tank should have high level alarms and a local/remote indicator for CRO (Control Room Operator)
2. Waste Water Tanks should have an overflow to a common buried tank as an Emergency Container. Tank building should employ a Ventallating/Cooling System that draws from

bldg. through filters (particulate/charcoal) to atmo.

Operational- Main Coolant pumps cavitating; via emergency circuitry pump operations at reduced speed could be utilized as necessary to maintin cooling - or one at a time periodically would suffice - cost plant versus pump??? Flow thru could have prevented fuel damage or excessive overheating.

Operational- In a problem situation at least 2 ml grab samples of Secondary should be routine houly or more frequent. If leak occurs, and both SG on line Secure Good SG (if leak not gross) Secure Air Ejectors, when Cond. pressure from non-condensibles gets too high vent.cond. to Gas Storage tank for decay. (Now you've essentially saved on contaminated (heavily) steam generator.) Maintain only enough water in Hot well to do the job of cooling Reactor. Be aware gland seal on all Secondary water pumps is Contaminated!! Procedures?

Operational- With steam venting to containment, gases activity, and Hydrogen Pressure is a problem. Spray system in Containment could reduce pressure and to some defree Hz content. Design?