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9 Twin Orchard Drive
Oswego, NY 13126
December 5, 2002

Mr. John A. Grobe, Director
Division of Reactor Safety
US Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Dear Mr. John A. Grobe:

Could I talk to you about the lower head deposits? Originally the Incore tubes had a problem. I am thinking that if the problem was vibration, perhaps they moved as I have shown in my Sketch 1. This would present a possible fatigue problem at (or near) the weld fastening them to the reactor vessel lower head.

A recent slide showed two welders working at the bottom of a reactor vessel (or mock-up) changing the support for the Incore tubes above the reactor vessel lower head. It would appear that if the fatigue problem mentioned above was 2 or so inches above the lower head, it got removed.

If the fatigue problem was in the original weld, a slide 2 of the November 26, 2002 presentation shows (as I interpret it) that it is now covered on the top with additional weld. I don't know if this is a problem or not. (Note that there is no distinction on this drawing of the original and the new weld.)

I think may be worth while to have a review done of the (previously done) Incore tube modification process with particular attention to the possibility of weld fracture at the bottom of the original weld. Secondly, I would hope that attention would be paid to the selection of weld metals used and their ability to resist boric acid. Thirdly, I would think that the maximum allowed amount of heat to be deposited by welding during any specified period of time should also be checked, as should any requirements for metal preheating.

During the replacement of external reactor recirculation system piping at Nine Mile Point, Unit I, I learned that it was extremely difficult to weld stainless steel to carbon steel. Therefore, an intermediate metal was used in between. Each (reactor recirculation system) carbon steel nozzle of the reactor vessel was welded to what I believe we called a "safe end." Each "safe end" was welded to a piece of stainless steel piping. That piece of stainless steel piping was welded to the next stainless steel pipe. These welds were all stress relieved.

If the stainless steel cladding on the Davis-Besse reactor vessel lower head was put on a "buttered" layer of another weld metal that was first welded to the carbon steel reactor vessel, there would be some challenging weld metal selection decisions needed for what I

have labeled the "Surface of Interest" on my Sketch 2. Note that it continues all around the Incore tube.

If there has been leakage of reactor coolant at my "Surface of Interest," it appears that it will drain away since there is no interference fit of the original Incore tube. However, if the Contingency Repair is made, this will no longer be the case. The weld(s) at the bottom of the head will pool any coolant just above them. Also, the severed tube will allow further leakage into the Incore tube, where, I guess, it would attack the Incore monitoring wires.

I don't like this repair method.

Well, the words above, I admit, must be hard to follow. Let me try to summarize.

At the top of the lower head, the modification added a second weld, probably on top of the first. (The November 26 Contingency Repair slide shows one weld.)

At the bottom of the lower head, I think there is one weld symbol, but there are two welds.

"PT" only will reveal fractures extending to the surface of the weld: in effect, the two new weld volumes will be uninspected (in my opinion).

The slide does not call for post weld stress relief, or pre-weld preheat, either.

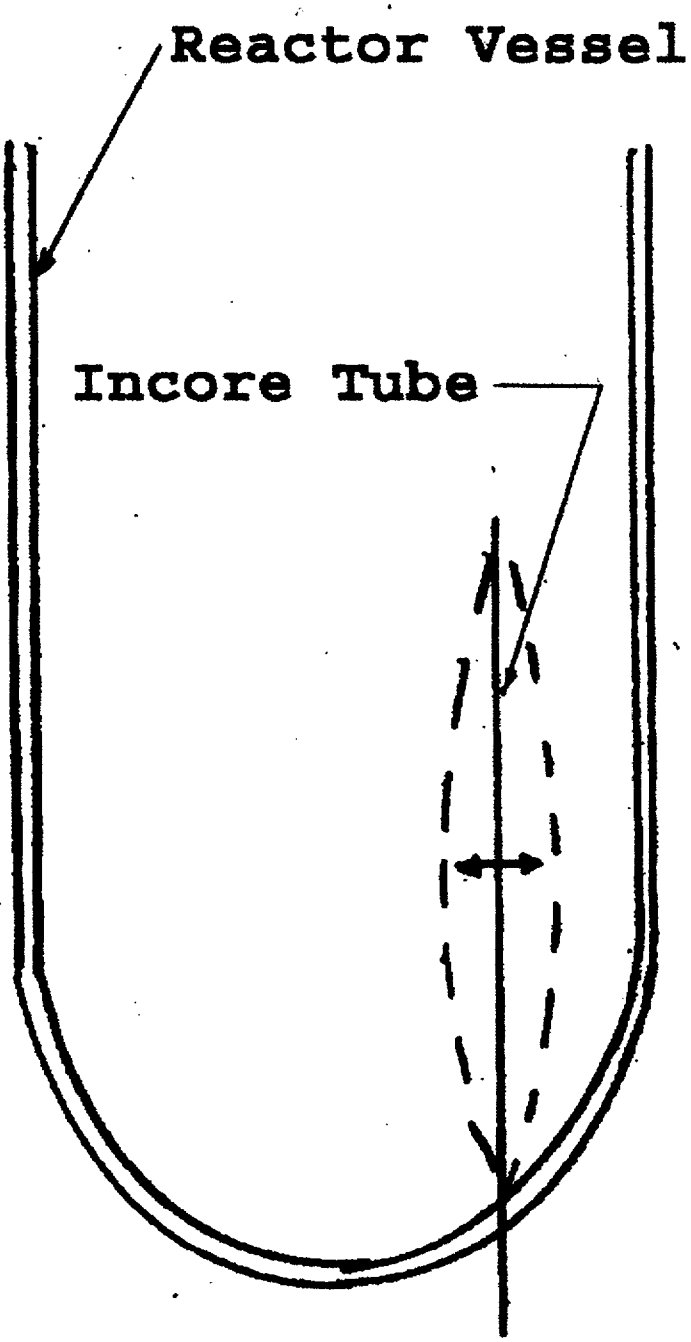
The slide first step appears to me as unnecessary. If the Incore tube does not leak, why is it necessary to plug it? Did anybody think of using the steam generator tube inspection technique on these Incore tubes?

This is my fifteenth letter. It needs no reply.

Thank you,

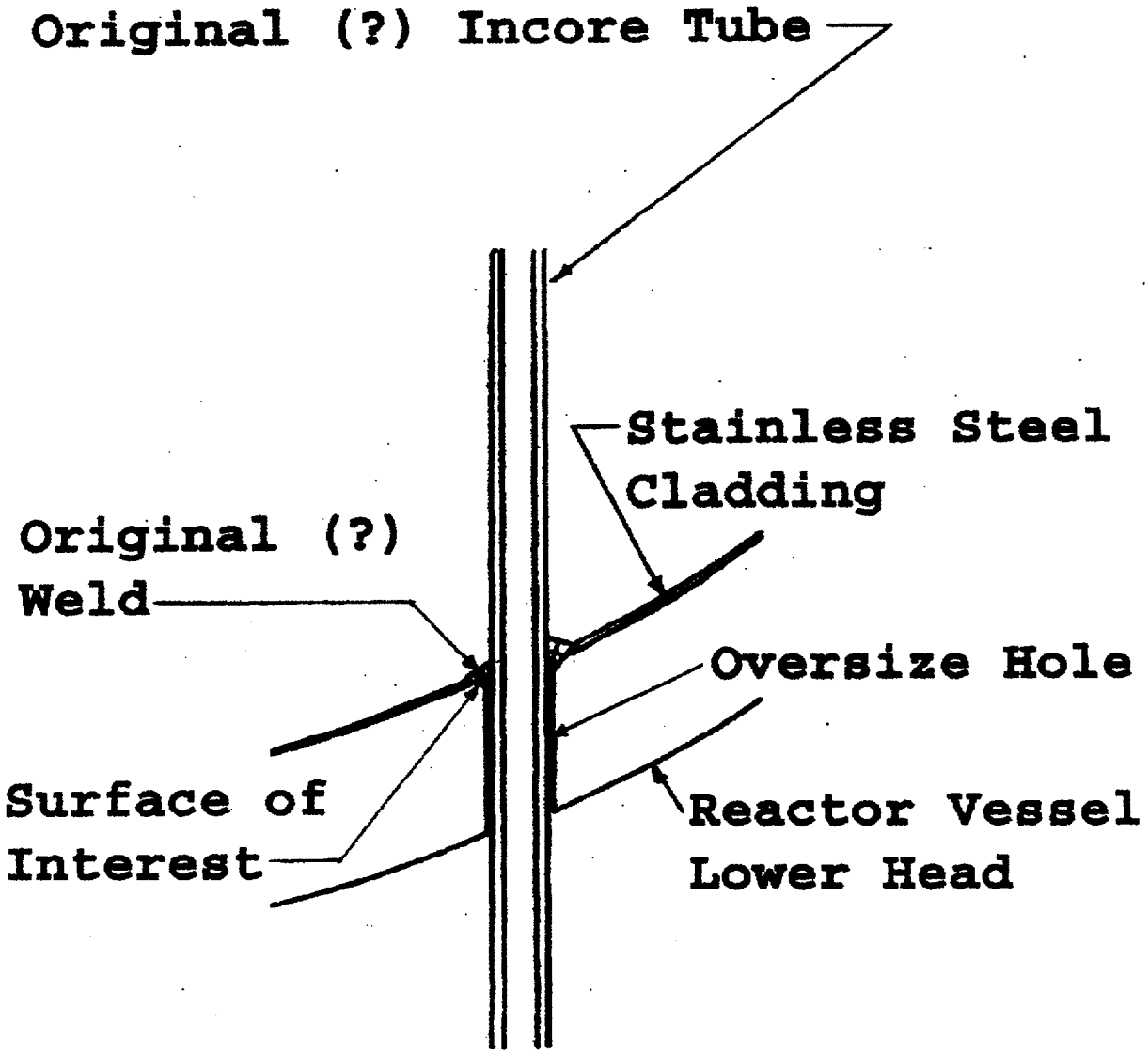
Tom Gurdziel

Attachments: Sketch 1, Sketch 2
Copy: D. Lochbaum



Sketch 1

TG 12-3-02



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Sketch 2