

START

0012059 23 Oct 90
2 John Wenson

HANFORD'S FIRST IN-TANK CRITICALITY--Reported 2 Mar 1955
"Operation of the auger-type agitator in the 101-SX tank on 17 Feb 55 resulted in a short-lived pressure surge measured at 35" of water, with an instantaneous boiling rate of 8.5 gal/min. vs normal fission product decay heat evolution which allowed 101-SX to operate at zero gauge" per Redox Process Engineering.

"On January 28, 1965, a sudden steam release occurred in Tank 105-A which was believed to be more intense than any previous similar event. The release also appeared to differ from previous releases (commonly called "bumps") in that the event occurred while the airlift circulators were reported to be in operation. Inspection of the tank instrumentation and equipment revealed no major damage,the following conclusions were reached in late 1965:

1. The tank had ceased to leak.
2. No evidence was found to indicate that the leakage was sufficient to create significant potential for contaminating the atmosphere or the groundwater.
3. The tank liner was bulged upward at one point to an elevation of 8.5 feet creating a void space of about 80,000 gallons. In April, 1967, a cyclic liquid level variation began to occur. A typical cycle consists of a 9-10 inch drop in liquid level in a matter of minutes followed by a relatively stable period lasting about 20 hours. The liquid level then returns to its original level in about a day. A logical explanation for this behaviour is that part of the area under the bulge alternates between a vapor and liquid phase.

Hanford and Savannah River experience had indicated that if the filling of a self-heating tank is discontinued for any significant period of time (a few months), excessive temperatures will occur in the settled sludge upon the addition of fresh waste to the tank. Purex Tk-101-A and Tk-102-A had both experienced temperature excursions as a result of adding fresh waste to a tank containing settled sludge."

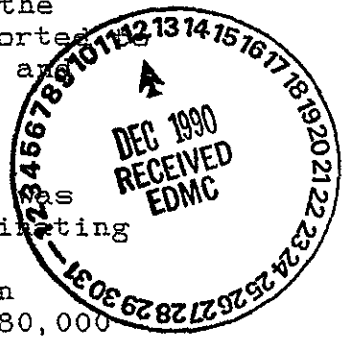
Reference: ARH78

RADIATION OCCURRENCE 8-25-58

During the week of 18 Aug 58 temperatures in 114-SX gradually increased in spite of the fact four air lifts were operating at 10 CFM....temperature 357 degrees F...over weekend 114-SX "bumped" three times...25 Aug 58 114-SX bumped again...steam observed to escape...contaminated 15,000 square feet to maximum of five rads per hour....

IN 1965, IN DEFIANCE OF COMMERCIAL REACTOR TECHNICAL SPECIFICATIONS, PUREX PLANT STARTED PROCESSING ZIRCALOY-2 CLAD METALLIC URANIUM FUEL BY CHEMICAL CLADDING DISSOLUTION. The COMMERCIAL PLANTS WERE USING URANIUM DIOXIDE FUEL (CANNOT MELT, CANNOT BURN--IT IS ALREADY BURNED)--with mechanical CHOPPING of the fuel cladding--like Nuclear Fuel Services, W.R.GRACE, DID WITH THEIR N-REACTOR FUEL THAT WAS 60% OF THEIR START-UP LOAD!

Since plutonium is formed at the surface of the fuel element, chemical dissolution of the cladding-fuel interface and the



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discarding of the intermetallics as "waste" accounts for the unusually high amounts of plutonium being added to the waste tanks.

An accounting of the total amount of plutonium created in the N-reactor, known by reactor physics and double checked many times; minus the amount of plutonium recovered at PUREX will quickly tell how much Pu was added to the waste tanks. To pretend that one can sample the ceramic sludge in the "layer of crust floating on tank 101-SY" is a cruel hoax. No one really knows how to representatively sample a complex solid, liquid, gaseous system like 101-SY. DOE better have detailed calculations and transfer records to establish the Pu content. 101-SY is known to have a history of burps and bumps (criticalities) because plutonium has concentrated into a critical array(s) in the sludge on its bottom. It is known to have explosive concentrations of radiolytically generated hydrogen above the liquid--only needing a source of ignition. BILL'S VOLCANO!

Bill Bonner, GeoSafe, Bill Wiley, Battelle, propose demonstrating their IN-SITU VITRIFICATION ON HANFORD WASTE TANKS (Really just Jane Fonda's China Syndrome upside down and backwards) Tri-City Herald front page 19 August 1990. I definitely feel they should test their hypothesis that plutonium with a density of 19 grams/cubic centimeter won't separate out on the bottom into a super-critical mass of fissile material, getting more than a hundred times the amount of plutonium together than was used on Nagasaki 9 Aug45. All that I ask is that they give me enough time to be far enough away to avoid the hydrogen gas explosion with the first flow of electricity between their electrodes, and the flowing together of a supercritical mass when the plutonium goes super-critical which should blow a lot of molten soil, concrete, and fission products a long way--making the SL-1 Reactor accidental criticality in Idaho in 1953 look like a little firecracker by comparison. Accidental Criticality--no way--Bill wants to do it on purpose!

ALL THE PRESIDENT'S HORSES AND ALL THE PRESIDENT'S MEN CANNOT GET THE PLUTONIUM OUT OF THOSE "WASTE" TANKS BEFORE THEY "GO CRITICAL" AGAIN...AND AGAIN... ON AN ALMOST PREDICTABLE SCHEDULE.....AS LONG AS THEY CONTINUE TO KEEP THEIR SILLY DAMN RULES...WHICH SAY A LITTLE BIT IS A LOT...THAT THE AMOUNT OF ULTRAVIOLET LIGHT THAT EXPOSES A FILM PACKET IN A YEAR IS EFFECTIVE RADIATION PROTECTION...WHEN THEY KNOW THAT ONLY EXCESSIVE ULTRAVIOLET LIGHT EXPOSURE TO A PERSON'S BONE MARROW IS THE ONLY REPORTABLE OVER-EXPOSURE OF A NUCLEAR WORKER.

GALEN WINSOR 23 OCTOBER 1990

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