

Release

From: Goutam Bagchi *NKK*
To: Glenn Kelly, Mark Rubin, Michael Cheok, Vonna O... *NKK*
Date: Mon, May 10, 1999 11:04 AM
Subject: Re: SFP piping information

I am not aware of any large failure of spent fuel pool pipes with the material types (stainless steel) you mentioned. With so many reactor years of operations such failures would have occurred had they been likely. Both pressure and temperature are relatively low for spent fuel pool pipes. For the implementation of a risk informed in service inspection plan, the calculated failure frequency for a 1.5 inch diameter stainless steel (SS-316) piping in the charging system which actually failed at a plant recently, is 5E-3. I must point out that this example does not apply to the case of spent fuel pool pipes. After the decommissioning of a plant, if we assume that the water quality will not be strictly controlled and exposure to chlorides occurs on a sustained basis and the temperature is above 90 degrees F, in about 2 years an existing crack can be expected to develop to a leak. This is not a complete failure of the pipe cross section. My recommendation is that we assume very low failure frequency - less than 1E-5.

Thank you,
Goutam Bagchi

>>> Glenn Kelly 05/05 4:22 PM >>>
Goutam,

As we discussed, I gathered information about pipes that penetrate the spent fuel pools. I got a reply from one licensee that they had the following pipes that penetrated the spent fuel pool and were capped.

All of the following are stainless steel ATM type 304: 10" diameter with 0.165" thickness (schedule 10); 4" diameter with 0.120" thickness (schedule 10); 3" diameter with 0.120" thickness (schedule 10); 2" diameter with 0.154" thickness (schedule 40).

The following connections were ASTM 312 type 304 stainless: 4" diameter with 0.120 " thickness.

Please let me know the frequency with which I should expect welds in these pipes to fail (low pressure piping).

Glenn

CC: James Davis

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