

RAS 14382

U.S. NUCLEAR REGULATORY COMMISSION  
In the Matter of AmerGen Energy Co.  
Docket No. 54-0219-LP Official Exhibit No. Citizen Exh 64  
OFFERED by: Applicant/Licensee Intervenor  
NRC Staff Other  
IDENTIFIED on 9/4/07 Witness/Panel N/A  
Action Taken: ADMITTED REJECTED WITHDRAWN  
Reporter/Clerk DW

### Exhibit 64

E-mails ending in e-mail from Gordon to Licina

DOCKETED  
USNRC

October 1, 2007 (10:45am)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

Template = SECY-028

SECY-02

[REDACTED]

**From:** Barry Gordon  
**Sent:** Tuesday, October 24, 2006 13:29  
**To:** George J. Licina  
**Subject:** RE: UT Measurement Results - Questions  
George,

Thanks. Note that my discussion with Gary Alkire is not related to Fred Polaski. The previous corrosion rate in the sand bed region was 20 mpy. Gary used the highest rate measured. The rates varied from 0.2 to 6 mpy.

[REDACTED]

Barry

**From:** George J. Licina  
**Sent:** Tuesday, October 24, 2006 12:57 PM  
**To:** Barry Gordon  
**Subject:** RE: UT Measurement Results - Questions

I will respond to you, based upon the information you sent, presumably for my information (only).

1. If the drywell actually is wet on both sides, corrosion from both sides should be considered. A rate of 3 mpy per side seems awfully high. As a corollary to your statement that a truly dry drywell will not experience any corrosion, it should also be pointed out that the corrosion rate will (also) be zero at locations where the coating is intact. A corollary to that corollary statement is that the life of a coating will typically be less than 40 years.
2. My position on determining rates from a single UT thickness measurement is similar to that of the Regulators. That is, a loss of thickness of X mils, determined after Y years of service, really only indicates that X mils were lost due to degradation. In the absence of anything else, a rate =  $X/Y$  can be used, but only as a very rough approximation. That apparent rate, and the significance of a loss of X mils, can also be used to help define the interval until the next inspection.
3. Once a second thickness measurement is made (as appears to be the case for OC), the rate can be approximated better, however, the time that any corrosion is operative is still somewhat unknown, the time of active corrosion during the first time interval remains unknown, and the time dependence of the metal loss is unlikely to be 1. For the form(s) of corrosion under discussion for the OC drywell, a time dependence less than 1 is much more likely; 1 can be used as an upper bound (plus mechanical engineers can actually convert rate to metal loss when a linear rate is used).
4. The fact that OC has UT thickness measurements at more than one time, hopefully at the same locations, and that some areas appear to be getting thinner while others are getting thicker, with the general trend toward some metal loss, implies that the drywell has corroded, probably a little bit, since the last thickness measurements, at a low rate. Those measurements, and the scatter in them, provide data that can be used to estimate an upper bound on metal loss. The extreme value statistics recommended by Hausler would use such data. Any statistical analysis would use those data to come up with predictions of worst case (defined statistically) metal loss and metal loss rate.

I hope that these are useful.

George Licina  
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**From:** Barry Gordon  
**Sent:** Tuesday, October 24, 2006 10:28  
**To:** Gary.Alkire@exeloncorp.com  
**Cc:** howie.ray@exeloncorp.com; sharon.eldridge@exeloncorp.com; james.hallenbeck@exeloncorp.com; Marcos Herrera; Rich Bax; George Licina  
**Subject:** RE: UT Measurement Results - Questions

Gary,

Since I am not familiar with the code minimum wall for the drywell, I cannot comment on it. However, SI has been discussing this type of structural analysis with Ahmed Ouaou and Chris Cooney. We will be happy to help you with it.

By definition, a truly dry drywell will not experience any corrosion.

The only Oyster Creek UT thickness discussions I have had since 1986 occurred today with Peter Tamburro.

Barry

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**From:** Gary.Alkire@exeloncorp.com [mailto:Gary.Alkire@exeloncorp.com]  
**Sent:** Tuesday, October 24, 2006 9:59 AM  
**To:** Barry Gordon  
**Cc:** howie.ray@exeloncorp.com; sharon.eldridge@exeloncorp.com; james.hallenbeck@exeloncorp.com  
**Subject:** UT Measurement Results - Questions

Barry....

So if we take the 6 mil per year corrosion rate (attack from both sides) and apply it to the drywell liner for the remaining life of the plant (assuming life extension) do we violate Code minimum wall? What is Code minimum wall for the drywell shell?  
OR  
Do we assume that the drywell will not get wet again and assume 3 mils ....what does that do for us???

One thing that Regulators questioned us at Peach Bottom was that we averaged corrosion rate over a long period of time.....(similar to this report) ....but what if the wall loss occurred in the last year? Do we have interim UT data points that show that we have had thinning or no thinning over the years? Peach Bottom was able to show that data and convince the NRC that this was not an overnight corrosion wall loss.

Have you been part of any of these discussions with the UT data evaluators?

Gary

-----Original Message-----

**From:** Barry Gordon [mailto:Bgordon@Structint.com]  
**Sent:** Tuesday, October 24, 2006 11:25 AM  
**To:** Alkire, Gary  
**Subject:** RE: Activity Report - Not True

Gary,

It was nice to chat with you today. Attached please find the latest revision.

Barry

[REDACTED]

OCP00000290



<<Oyster Creek Drywell Corrosion BMG06015 R06436R0b.doc>>

**From:** Barry Gordon  
**Sent:** Tuesday, October 24, 2006 9:09 AM  
**To:** Gary Alkire  
**Subject:** Activity Report - Not True

Hi Gary,

Addressing you activity comment:

"I would like to see the Chemistry department's position on activity being 4 times less than for active leakage in this report somewhere to help support the above Calcium position. Talk to Chemistry for details or forget this comment if this statement can no longer be supported by Chemistry."

The BXWT report states the following under the section **"Previously Circulated Conclusions and Why Conclusion No Longer Valid"**:

"The presence of short-lived radionuclides and a 511 keV peak in the trough sample and their absence in the trench samples indicates that the trough water is fresher and the trench water is 'older.' The 511 keV peak is due to fluorine-18 that has a 1.8 hour half life. The trench samples are four orders of magnitude lower in activity than the trough samples. This indicates the water in the trench is not refreshed with short-lived radionuclides as is the water in the trough.

a. OC isotopic data shows 511 keV peak in only the Drywell 1-8 Sump and Drywell CRD Leak samples." (and not in either the trough or trench water)

I added the UT data to my report. However, the tracer results are unknown.

Barry

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Thank You.

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OCP0000291