



**FPL Energy**  
**Seabrook Station**

FPL Energy Seabrook Station  
P.O. Box 300  
Seabrook, NH 03874  
(603) 773-7000

February 14, 2003

Docket No. 50-443  
NYN-03014

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

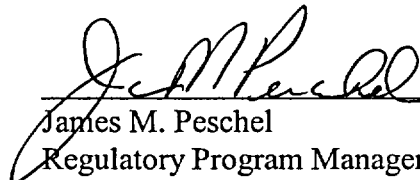
Seabrook Station  
Submittal of Investigation Report on Blind Performance Test Samples

In accordance with 10 CFR 26 Appendix A, Subpart B, 2.8(e) (4), FPL Energy Seabrook, LLC submits the enclosed Investigation Report on Blind Performance Test Samples.

Should you have any questions pertaining to this matter, please contact Mr. James J. Pandolfo, Security Manager, at (603) 773-7047.

Very truly yours,

FPL Energy Seabrook, LLC

  
James M. Peschel  
Regulatory Program Manager

cc:

H. J. Miller, NRC Region 1 Administrator  
V. Nerses, NRC Project Manager, Project Directorate I -2  
G. F. Dentel, NRC Senior Resident Inspector

A022

ENCLOSURE TO NYN-03014

# INVESTIGATION REPORT

on

## Blind Performance Test Samples for North Atlantic Energy Service Corp. Seabrook Station

### Objective:

The licensee shall investigate any unsatisfactory performance testing result. A record shall be made of the investigative findings and the corrective action taken by the laboratory. The licensee shall send the document to the NRC as a report of the unsatisfactory performance testing incident within 30 days.

### References:

1. 10 CFR 26 Appendix A, Subpart 2.8(e)(4)
2. FR 53, 11970 (1988), Subparts 3.19(b)(2) & (5)

### Observation:

Seabrook Station submitted a blind quality control sample containing d-amphetamine to the Quest Diagnostics laboratory in Norristown, Pennsylvania, on September 30, 2002, with the ID number of 6374942. It was reported by the laboratory as negative. The MRO requested the laboratory to analyze the sample by GC/MS, wherein the laboratory reported the presence of amphetamine at a concentration of 1,059 ng/mL. With the confirmation cutoff of 500 ng/mL, this would have constituted a positive result.

Duo Research Inc. provided the sample to Seabrook Station in a shipment on June 3, 2002. Duo Research was requested to assist in the investigation of these results.

### Finding:

The amphetamine sample provided by Duo Research was from lot number 9657-033, bottle 78650. The original reference value was 1,529 ng/mL. The Quest Diagnostics laboratory was contacted to obtain the original screening result and any other information regarding the initial testing and retesting of the sample.

The laboratory provided the following data: the initial screening result for the sample gave a negative reading. So, the laboratory reported it correctly as negative based on the result. As reported to the MRO, the retest by GC/MS had a value of 1,059 ng/mL. The laboratory also obtained a creatinine value of 53.6 mg/dL.

Seabrook Station had submitted blind samples from this same lot in February, March and in May. The laboratory also provided the quantitative results for these, which were: amphetamine = 1,505, creatinine = 73; amphetamine = 1,425, creatinine = 71; and amphetamine = 1,498, creatinine = 72, respectively.

Duo Research obtains quantitative results from other clients for blind samples submitted to other laboratories, and, for purposes of this investigation, attempted to obtain additional quantitative results from other clients. We obtained the following values for samples derived from the same lot as in the questioned sample described above: amphetamine range 1,392 - 1,650 ng/mL, creatinine range 69 - 79 mg/dL.

Particular attention was directed at all of the samples prepared for shipment the week of June 3, 2002. A total of 154 samples were prepared for shipment. Of these, in addition to the 25 prepared for Seabrook Station, 43 other samples were prepared in a similar manner, i.e., poured into bottles and sent non-frozen to client sites. These 68 samples were poured and prepared on May 30, stored in a refrigerator and shipped on June 3. The other 86 samples were prepared in laboratory-supplied bottles and sent along with prepared custody forms directly to various laboratories or to collection sites for laboratory courier pick up. Of these 154 samples, six were poured from the same stock bottle for cocaine metabolite and another six from the same stock bottle for d-amphetamine. One of each of these was included in the shipment to Seabrook Station and to another client whose samples were prepared at the same time as those for Seabrook Station. All of the other five cocaine metabolite and d-amphetamine samples were reported correctly, including the two prepared on the same day, as positive as was the other 148 samples reported correctly as negative or positive. For the results that we received, all incorrect results are investigated, and no results similar to those being investigated have occurred in the the past several years.

Nearly all of the samples are prepared for Duo Research by one laboratory technician, who has performed these duties for the past four years, preparing approximately 8,000 samples in a similar manner each year. The process typically starts with the removal of a stock bottle from a freezer if sufficient stock is not thawed, usually the week before when it will be needed. This permits it to thaw slowly in a refrigerator. On the day of preparation, a stock bottle is removed from the refrigerator, mixed gently and 60 mL are poured from the bulk bottle into a standard laboratory bottle. These are sterile bottles, purchased in bulk and not rinsed or reused in any manner. The filled bottle is sealed, labeled and packaged for shipment to Seabrook Station. A strict rule in our procedures is for only one source of sample material is open at a time, preventing the possibility of mixing samples.

There is always concern about the thawing process of frozen quality control samples. This is true for large as well as small bottles. As noted above, the large stock bottles, which contain approximately 1,250 mL, are normally thawed in advance, stored refrigerated, and mixed before each use. If the contents are not completely thawed, a sample removed could have a result different from the\at expected. The records show that the d-amphetamine stock bottle was actually thawed on May 6 and the cocaine metabolite bottle on May 12, both well before they were used on May 30 for the preparation of the two samples in question.

#### Conclusion and Recommendation:

It is known that amphetamine is a fairly stable analyte. The earlier results from the Norristown laboratories and other laboratories are consistent with good stability. It is noted that both the amphetamine and creatinine concentrations are about one-fourth lower than the other results. Since both concentrations were about one-fourth lower, it appears that the sample was diluted at some point in its handling. This would be difficult to do at the laboratory, as it would have to have occurred immediately after the specimen

bottle was opened, as the initial screening result was below where it should have been. The standard procedure at the laboratory is to open the bottle, pour off a small amount into a test tube, which is then submitted for screening. The two samples in question were not frozen at the Quest laboratory prior to being submitted to GC/MS analysis.

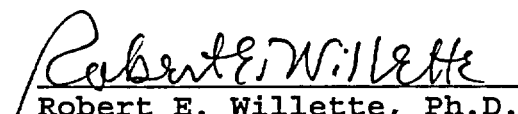
Thus, it would appear that the sample might have been diluted in some manner at the time it was first prepared by Duo Research. In light of the information presented above, this appears unlikely as all other samples prepared that day in a similar manner were reported correctly. The only difference between the two samples in question that were sent to Seabrook Station and the d-amphetamine and cocaine metabolite samples sent to another client, is that in the latter case, the samples are prepared directly in bottles provided by the laboratory, so no transfer is required at the client's site.

The samples were shipped in liquid form to Seabrook Station, which stored the bottles in a freezer until needed, thawed them and transferred the contents into bottles provided by the laboratory. These handling procedures should be reviewed as a possible source of dilution. As previously reported, a similar problem occurred with a cocaine metabolite sample earlier. In discussing this problem with Ms. Mills, at the Quest Norristown laboratory where frozen samples are frequently thawed and retested, one possible source of apparent dilution can occur if the contents of the bottles are not thoroughly thawed and mixed before transferring into the laboratory bottles. The staff at Seabrook Station have informed us that the bottles are thawed in advance and the entire contents of the sample are transferred into the laboratory bottle.

It is concluded that the error does not appear to be the fault of the laboratory, although there is no way to totally rule this out. Based on the information presented above and that provided by Seabrook Station staff, there is no apparent explanation for this odd occurrence. For the samples to be diluted in some manner at any of the three locations would have required a very out of the ordinary event. Therefore, it is recommended that subsequent results from the laboratory be closely monitored and that the sample preparation steps at Duo Research and Seabrook Station be carefully monitored to insure that no similar occurrence can take place.

Prepared for: Seabrook Station

by:

  
Robert E. Willette, Ph.D.  
President  
Duo Research Inc.

Date:

