

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In Re: Petition on behalf of Citizens of
the State of Florida to require
Progress Energy Florida, Inc. to
refund to customers \$143 million**

**DOCKET NO. 060658
Submitted for filing: January 16, 2007**

**DIRECT TESTIMONY
OF HUBERT J. MILLER
ON BEHALF OF
PROGRESS ENERGY FLORIDA**

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**IN RE: PETITION ON BEHALF OF CITIZENS OF THE
STATE OF FLORIDA TO REQUIRE PROGRESS ENERGY
FLORIDA, INC. TO REFUND CUSTOMERS \$143 MILLION**

FPSC DOCKET NO. 060658

DIRECT TESTIMONY OF

HUBERT J. MILLER

I. INTRODUCTION AND QUALIFICATIONS

1

2

3 **Q. Please state your name and business address.**

4 **A.** My name is Hubert J. Miller, and my business address is 97 Brown Road,
5 Stillwater, New York 12170.

6

7 **Q. By whom are you employed and in what capacity?**

8 **A.** I am self-employed as a nuclear safety consultant.

9

10 **Q. What do you do?**

11 **A.** I provide nuclear safety consulting services to the commercial nuclear power
12 industry. I serve on safety oversight committees and perform assessments at
13 numerous plants throughout the United States. Among the committees I serve on
14 is the Crystal River Unit 3 ("CR3") Nuclear Safety Review Committee ("NSRC").
15 I have performed assessments at a number of plants recovering from significant
16 operating performance problems and regulatory infractions. For example, I
17 chaired a special panel of industry experts which was established at the Perry

1 Nuclear Station to oversee recovery, over a two year period, from events which
2 led the U.S. Nuclear Regulatory Commission (“NRC”) to place the Station in the
3 highest category of regulatory concern. In addition, I advise senior company
4 officials and Boards of Directors on safety and security performance issues in the
5 nuclear industry.

6

7 **Q. What is the purpose of your testimony?**

8 **A.** I will address the nuclear safety issues associated with bringing Powder River
9 Basin (“PRB”) coal onto the same site as Progress Energy Florida, Inc’s (“PEF’s”
10 or the “Company’s”) nuclear unit, CR3. Because PRB coal presents certain
11 hazards, such as spontaneous combustibility, potential explosiveness, and
12 dustiness, its potential use at Crystal River must be thoroughly evaluated by the
13 Company to comply with nuclear safety regulations. In particular, I provide my
14 opinion, based on more than 35 years of nuclear experience and 28 years at NRC,
15 as to what assessments NRC would require of PEF if PRB coal were to be
16 considered, as well as how NRC would become involved in those assessments.
17 My testimony is also based on my familiarity with the Crystal River site from my
18 service on the CR3 NSRC.

19

20 **Q. Please describe your education background and professional experience.**

21 **A.** I received both B.S. Civil Engineering and A.B. Liberal Arts degrees from the
22 University of Notre Dame, and an M.S. degree from the School of Public Health,
23 University of North Carolina, Chapel Hill. I completed advanced nuclear

1 engineering training at the Bettis Reactor Engineering School while in the U.S.
2 Navy. I am a registered professional engineer in the State of Virginia.

3 I have been self-employed as a nuclear safety consultant from August
4 2004 to the present. From 1976-2004, I held various positions at the NRC. I was
5 Administrator of two NRC Regions, where I was responsible for oversight of
6 nuclear power stations, decommissioning sites and radioisotope users. I was
7 Administrator of the Northeast Region (NRC Region I) from 1996 to 2004.
8 Previously, I was in charge of the Midwest Region (Region III). In these
9 positions, I led heightened agency monitoring of performance improvement
10 programs at numerous "problem" sites. In addition to directing safety and
11 security inspections, I frequently dealt with other government agencies, elected
12 officials and public groups on emergent issues. This included testifying before
13 Congressional Committees examining post-9/11 security measures and
14 emergency preparedness. I began my career at the NRC in 1976 where I worked
15 on the development of waste management regulations and policy, as well as
16 oversight of Department of Energy high level waste activities (Yucca Mountain).
17 From 1984 through 1987, as a senior executive in NRC headquarters, I led
18 development of several quality assurance initiatives applicable to new plant
19 construction. I served in the U.S. Navy at the Division of Naval Reactors from
20 1970 to 1975, where I was involved in naval reactor plant design and testing, as
21 well as shipyard performance audits.

22
23 **Q. Please summarize your testimony.**

1 A. I believe risk assessments would be needed if use of PRB coal is to be considered.
2 As I understand it, PRB coal is prone to spontaneous combustion and dustiness, as
3 well as explosiveness. Based on these hazardous tendencies, before a significant
4 amount of this coal can be used at the Crystal River Energy Complex, near CR3,
5 NRC regulations require a detailed analysis of the risks posed by this PRB coal
6 and whether any mitigating strategies can be employed to reduce those risks to an
7 acceptable level.

8 In addition, based on my experience at the NRC, I can say that the NRC
9 would likely show strong interest in any evaluation conducted by the Company
10 regarding the use of this PRB coal at the Crystal River site. This interest would
11 likely include oversight during the evaluation process, even if a formal license
12 amendment application to the NRC is ultimately not required. The NRC will
13 want to be involved at some level and ask questions during the analysis of
14 potential hazards PRB coal use would present to CR3 operation.

15 I know of no other nuclear facility that operates on the same site as a coal
16 unit that burns PRB coal, and I likewise am not aware of any licensed nuclear
17 operator ever analyzing the particular risks presented by such coal. NRC safety
18 assessments of licensed operator proposals are considerably more straightforward
19 and timely where precedents exist, than assessments of cases such as this one,
20 where there is no precedent. To use this PRB coal at the Crystal River Energy
21 Complex, PEF must present a compelling case that stringent monitoring methods,
22 controls, and mitigating measures could be instituted to assure the activity would
23 not impact safe CR3 operation.

1

2

II. GENERAL OVERVIEW OF NRC REGULATORY FRAMEWORK

3

4 **Q. Have you reviewed Jon Franke's testimony in this proceeding?**

5 **A.** Yes, I have read Mr. Franke's testimony.

6

7 **Q. Do you agree with Mr. Franke's description of the regulatory regime with**
8 **which PEF, as an operator of a nuclear facility, must comply?**

9 **A.** Yes, Mr. Franke has accurately described the regulations and requirements
10 imposed by the NRC on nuclear plant operators like PEF.

11

12 **Q. Would you like to add anything to Mr. Franke's description based on your**
13 **experience with the NRC?**

14 **A.** I would just like to expand on some key features of the NRC's inspection and
15 regulatory oversight program -- the methods by which NRC assures its safety
16 requirements are being met. It starts with highly qualified resident inspectors who
17 are assigned on a full-time basis to each nuclear power plant. They inspect
18 routine activities, such as testing of various safety equipment and functions. They
19 also monitor plant activities on a daily basis to assure NRC is aware of emergent
20 issues and new developments and verify they are properly addressed for their
21 impact on nuclear safety by the plant operator. Resident inspectors are backed up
22 by region-based specialists who conduct periodic inspections and technical
23 assessments of events and potential safety issues that emerge. Beyond the

1 Region, technical experts in NRC headquarters offices conduct reviews of
2 licensing proposals and support the regions in analyzing unique, complex safety
3 issues that arise. Finally, special teams, composed of NRC inspectors and
4 technical experts, conduct inspections. These special team inspections examine,
5 in depth, selected plant activities on a periodic basis as well as operating problems
6 and events that might occur.

7
8 **Q. As Regional Administrator at the NRC, how involved were you in the**
9 **operation of each nuclear unit in your region?**

10 **A.** While I was Regional Administrator, I was responsible for the activities of both
11 the resident inspectors and the region-based specialists. I received daily briefings
12 on plant events, significant activities and inspection developments. I frequently
13 visited sites to assure inspection programs were properly conducted and discuss
14 important safety and plant performance issues with licensee management.
15 Together with other senior managers in my region and NRC headquarters, I
16 played an active role in the assessment of licensee performance issues as well as
17 unique safety issues that would arise at plants. I led the response to events at
18 plants in my region, which involved close monitoring from our incident response
19 center and on-scene oversight by inspectors.

20
21
22 **III. ASSESSMENT OF RISKS ASSOCIATED WITH PRB COAL**

1 **Q. Have you reviewed Rod Hatt's testimony in this proceeding?**

2 **A.** Yes, I have read Mr. Hatt's testimony, specifically as it relates to the
3 characteristics of PRB coal and the risks that those characteristics create.
4

5 **Q. What is your understanding of the risks and characteristics of PRB coal?**

6 **A.** I understand from Mr. Hatt's testimony that PRB coal is susceptible to
7 spontaneous combustion. I understand that this can be caused by a chemical
8 reaction that occurs when PRB coal is wet, such that the wet PRB coal can catch
9 on fire and then continue to be fueled by whatever dry PRB coal happens to be
10 near it. Further, PRB coal is apparently classified as explosive. What's more,
11 PRB coal has a tendency to break down rather easily, and thus creates significant
12 amounts of dust. That PRB coal dust is also flammable and potentially explosive.
13 It can be carried by wind some distance from areas where it is stored and
14 transported.
15

16 **Q. Can you comment on the risks that PRB coal poses to safe operation of CR3?**

17 **A.** Certainly. I believe PEF would need to take steps to comply with NRC
18 regulations before the PRB coal could be brought onto the Crystal River site for
19 long-term use. This includes the 10 C.F.R. 50.59 requirements. Briefly, any
20 change to a nuclear facility, or in the environment near the facility, that can
21 change the nature or likelihood of risks that were assessed in authorizing the
22 facility's initial operating license, must be assessed pursuant to this regulation.
23 Specific, potential impacts to CR3 would need to be addressed in the assessment.

1 This includes control room habitability, loss of offsite power, degradation or loss
2 of diesel back-up power supplies and other vital safety equipment and safety
3 controls. I understand from reading Mr. Franke's testimony that the Company
4 would consider these potential impacts to CR3 in its assessment of the risks posed
5 by PRB coal on site. The uniqueness of the case would make the assessment
6 challenging for both PEF and the NRC.

7 Further, I believe that, given the unique and potential serious nature of the
8 hazards of PRB coal described by Mr. Hatt, it is possible that formal NRC review
9 and approval would be required.

11 IV. NRC REACTION TO ANALYSIS OF PRB COAL

12
13 **Q. Given your experience as a Regional Administrator at the NRC, do you have**
14 **an opinion as to how the NRC would likely view or become involved in an**
15 **assessment of this PRB coal by PEF?**

16 **A.** Yes, even if a formal license amendment application did not have to be submitted
17 to the NRC, the NRC would have a strong interest in PEF's assessment of the
18 risks. NRC would be concerned with PEF's evaluation of both the hazards posed,
19 as well as the special controls and mitigating measures instituted to ensure that the
20 PRB coal did not present an undue risk to nuclear plant safety. The bottom line is
21 that PEF would need to present a compelling case that, if PRB coal were to be
22 used on a long-term basis, stringent monitoring methods, controls, and mitigating

1 measures could be instituted to assure that the activity would not impact safe CR3
2 operation.

3 As a practical matter, plant operators normally take the initiative and brief
4 NRC inspectors and managers of significant developments, such as these, and
5 discuss potential risks that might be posed. Even if this were not done, NRC
6 resident inspectors would almost certainly become aware of such plans and would
7 engage company officials on details to assure the 10 CFR 50.59 screening
8 assessments were properly performed. I would expect key regional and
9 headquarters staff and managers would be advised of the plans. This often sparks
10 further questions. There is no requirement that NRC review all 50.59 evaluations
11 performed at a plant. These are sampled by inspectors. Given the nature of PRB
12 risks, I would expect this case would get reviewed not only for its impact on
13 nuclear safety equipment but for its potential impact on vital plant security
14 functions.

15 Of course, if following 10 CFR 50.59 assessments, it was determined
16 formal NRC review and approval of a license amendment would be necessary,
17 significant technical reviews would ensue. As I mentioned earlier, I would expect
18 these would not be routine given the uniqueness and nature of risks involved.
19 NRC would thoroughly review the controls and mitigating measures that the
20 company would propose to assure use of PRB coal would not pose undue risk to
21 the public. There would likely be, at least, one round of questions from NRC
22 technical reviewers that would need to be answered through formal
23 correspondence. NRC's license amendment process offers opportunity for a

1 public hearing and requires consultation with appropriate state officials. After all
2 questions from reviewers are answered, NRC would make its decision. The basis
3 for the decision, whether it is approval or disapproval, would be recorded in a
4 safety evaluation report. To approve the proposal, NRC would have to
5 independently establish, with reasonable assurance, that the amendment would
6 not endanger the health and safety of the public and that proposed activities would
7 be in compliance with NRC regulations. The length of time it takes to complete
8 this process can vary, but it can take as long as a year or more.

9

10 **Q. If a nuclear power plant in your region had assessed the risk of PRB coal**
11 **while you were Regional Administrator, how would you have responded to**
12 **this evaluation?**

13 **A.** I would have been very interested in this issue, given what I understand about this
14 coal from Mr. Hatt's testimony. I would look for assurances from my staff that
15 they were involved enough in the matter to assure PEF was doing the right
16 assessments and that regional staff was in a position to provide an independent
17 perspective on the risks. I, or one of the other regional office senior executives,
18 would very likely be briefed on the matter. We would take steps to obtain any
19 additional expertise that might be needed to provide competent, technical
20 oversight. In short, with the assistance of my staff and regional managers, I
21 would assure that stringent mitigating measures to control and limit the hazards
22 posed by the PRB coal were established before the PRB coal could be used on a
23 long-term basis near the nuclear facility.

1 **Q. What would NRC do if PRB coal fires or other, related problems were to**
2 **occur and threaten CR3 operations?**

3 **A.** It would depend upon the severity of the problem. Fires that would threaten but
4 not actually impact on CR3 operations would be closely monitored by resident
5 inspectors and regional staff. If fires, significant accumulations of coal dust, or
6 other aspects were to actually impact on plant safety or plant security functions
7 (which are vital in this post-9/11 world), NRC would escalate its attention and
8 involvement. If failures of significant safety equipment were to occur and result
9 in a plant shutdown, or if security functions became impaired, NRC would very
10 likely conduct a special inspection. Depending upon the severity and complexity
11 of the event, NRC might expect the plant to be held in shutdown status until the
12 matter could be thoroughly examined and corrective actions taken.

13 NRC would then assess company performance in accordance with its
14 reactor oversight program. Failure to adequately control the risks could result in
15 significant, additional regulatory action. Experience shows that it can take
16 considerable time and additional money to recover a plant from heightened
17 regulatory oversight status.

18

19 **IV. CONCLUSION**

20

21 **Q. Does this conclude your testimony?**

22 **A.** Yes, it does.

23