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PACIFIC GAS AND ELECTRIC COMPANY
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8 UNITED STATES BANKRUPTCY COURT
9 NORTHERN DISTRICT OF CALIFORNIA
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11 In re
12 PACIFIC GAS AND ELECTRIC
13 COMPANY, a California corporation,

14 Debtor.

15 Federal I.D. No. 94-0742640
16

Case No. 01-30923 DM

Chapter 11 Case

Date: November 27, 2002

Time: 9:30 a.m.

Place: 235 Pine Street, 22nd Floor
San Francisco, California

Judge: Hon. Dennis Montali

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19 DECLARATION OF LAWRENCE WOMACK IN SUPPORT OF DEBTOR'S MOTION
FOR ORDER APPROVING EXPENDITURE OF FUNDS TO RETROFIT
20 SIX LOW-PRESSURE TURBINES AT THE DIABLO CANYON POWER PLANT
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1 I, Lawrence Womack, declare as follows:

2 1. I am the Vice President of Nuclear Services at Pacific Gas and Electric Company
3 (PG&E), a position I have held since January 1, 1995. I make this Declaration based upon
4 my personal knowledge of the Diablo Canyon Turbine Retrofit Project ("DCPP Turbine
5 Retrofit Project") and upon my review of PG&E's records concerning the matters stated
6 herein. If called as a witness, I could and would testify competently to the facts stated
7 herein.

8 2. PG&E is seeking an order authorizing PG&E to enter into binding agreements
9 and incur capital expenditures not exceeding \$110 million to retrofit six low-pressure
10 turbines at its Diablo Canyon Power Plant ("DCPP").

11 3. DCPP is a nuclear power plant located in San Luis Obispo County, California.
12 The plant is the largest generating station on the PG&E electric system and provides power
13 for over two million northern and central Californians from its two 1,100 megawatt units.

14 4. The two units at DCPP each have a turbine generator train that consists of a high-
15 pressure (HP) turbine, three low-pressure (LP) turbines and a generator/exciter. The six
16 installed LP turbines were purchased in the late 1960s from Westinghouse Electric
17 Corporation as part of DCPP's construction. In addition, PG&E purchased three location-
18 specific LP turbine rotor spares in 1979. Each spare is interchangeable with one location
19 (designated A, B and C) in either unit. As a result, there are presently three LP-A rotors,
20 three LP-B rotors and three LP-C rotors.

21 5. All nine of these rotors are experiencing stress corrosion cracking ("SCC") of the
22 rotor in the blade attachment area and/or high cycle fatigue cracking of the blades
23 themselves. The estimated remaining life of the rotors is three refueling cycles
24 (approximately five years) or less. Maintenance costs are increasing dramatically, reliability
25 is a concern and the risk of a forced outage due to blade detachment has become more
26 significant.

27 6. The DCPP Turbine Retrofit Project has been designed to address and remedy the
28 problems with the LP turbines. More specifically, the DCPP Turbine Retrofit Project

1 provides for the design, fabrication, delivery and installation of six LP Turbine retrofits.
2 PG&E has conducted a competitive bidding process, and its team of engineering, business
3 and technical experts have thoroughly evaluated various proposals. At the moment, PG&E
4 is in final contract negotiations with a highly regarded multinational firm.

5 7. SCC in the blade attachment area of nuclear steam turbines has been an industry-
6 wide problem with rotors of the design of those in use at DCP. ¹ To address this problem,
7 PG&E has been performing major inspections, analyses and maintenance on the existing
8 nine rotors. At each outage, PG&E removes one rotor and replaces it with a spare. The
9 removed rotor is inspected for cracks, analyzed for estimated time to failure and repaired as
10 necessary to restore a minimum level of short-term reliability. The repaired rotor is then
11 used to replace the next rotor of identical design (LP-A, LP-B or LP-C) when that rotor is, in
12 turn, removed for inspection, analysis and repair.

13 8. The maintenance program used to date merely monitors, and sometimes
14 postpones, the time to failure. The program does not provide a long-term solution to the
15 SCC problem. A long-term refurbishment fix for the SCC design defect would cost more
16 than \$44,000,000 for the nine rotors. This type of approach would not address the additional
17 problem of the high cycle fatigue design defect, discussed below.

18 9. In addition to the SCC problems on the rotor discs, DCP is also experiencing
19 numerous instances of high cycle fatigue ("HCF") in the blade roots, where the blades attach
20 to the rotor. HCF cracking could result in one or more blades separating from the rotor.
21 This would most likely result in a forced shutdown and outage of 60 days or longer.

22 10. Because of the geometric constraints of the existing turbines, a long-term
23 refurbishment fix addressing the HCF may not be possible. For the short term, PG&E has
24 undertaken a program of increased inspections and major, temporary repairs, as necessary to
25

26 ¹PG&E is currently involved in litigation with the supplier of the existing LP rotors,
27 Siemens-Westinghouse Power Corporation (formerly Westinghouse). This litigation is not
28 expected to have a material impact on the need for the proposed DCP Turbine Retrofit
Project.

1 restore a minimum level of acceptable reliability. The temporary repairs consist of complete
2 replacement of selected rows of blades on each turbine rotor. This program reduces, but
3 does not eliminate, the probability of a forced outage. While the program restarts the clock
4 relative to time to failure, it does not fix the underlying problem. Continued DCP
5 operation without LP turbine replacement would require periodic, repeated, full row blade
6 replacements. The estimated cost of such a re-blading program is \$35,000,000.

7 11. Recently, one blade in a rotor with only one cycle of operation developed a crack.
8 Crack morphology in progress may suggest that the current frequency of blade replacement
9 is inadequate. If this is the case, maintenance expenditures would have to be increased. The
10 HCF problem discussed above has only become apparent in the last few years. PG&E can
11 likely expect additional problems with the turbine rotors in the future.

12 12. Nuclear power plants operate within strict regulations and are closely monitored.
13 A turbine-failure-induced forced outage at DCP would be closely scrutinized by the
14 Nuclear Regulatory Commission ("NRC"), the Institute of Nuclear Power Operations
15 ("INPO"), the media and the general public. While there would be no nuclear safety risks
16 associated with a turbine failure, the NRC would likely require PG&E to either shut down
17 DCP's other unit to enable inspections of its turbine rotors, or demonstrate why a similar
18 problem would not occur on that unit.

19 13. The costs associated with the DCP Retrofit Project were included in both the
20 2003 General Rate Case filing before the California Public Utilities Commission and the pro
21 forma financial analysis underlying PG&E's proposed Plan of Reorganization.

22 14. On October 16, 2002, PG&E's Board of Directors approved a capital expenditure
23 of \$110 million for the DCP Turbine Retrofit Project. These funds are expected to cover
24 the anticipated work supporting the DCP Turbine Retrofit Project.

25 15. Based on PG&E's evaluation of bids submitted pursuant to a competitive bidding
26 process, PG&E estimates that the DCP Turbine Retrofit Project will cost approximately
27 \$110 million. Approximately \$700,000 is included in the 2002 budget, with the balance
28 presently anticipated to be incurred in the next four years, consistent with the DCP Retrofit

1 Project's current targeted completion date in 2006.

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3 I declare under penalty of perjury under the laws of the United States of America that
4 the foregoing is true and correct. Executed this 5th day of November, 2002 at San
5 Francisco, California.

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8 Lawrence Womack

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14 HOWARD
RICE
NEMEROVSKI
CANADY
BAK
& RABKIN
15 A Professional Corporation