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PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-4398

April 14, 2011

R E S O L U T I O N

Resolution E-4398. Pacific Gas and Electric Company's (PG&E) Uranium Enrichment Services Contract Amendment with URENCO Ltd. for Diablo Canyon Power Plant.

PROPOSED OUTCOME:

- (1) Approves PG&E's request for Commission approval of an amendment to the long-term Uranium Enrichment Services contract for its Diablo Canyon Power Plant (DCPP) with URENCO Ltd.**
- (2) ESTIMATED COST: Based on comparison to PG&E's approved Nuclear Fuel Procurement Plan, PG&E's new contract amendment with URENCO Ltd. should not increase PG&E's revenue requirements above what would be expected for procurement of nuclear fuel materials and services during the contract period. The actual contract prices and terms are confidential.**

By Advice Letter 3737-E filed on September 21, 2010.

SUMMARY

This Resolution approves PG&E's request for Commission review and approval of a long-term uranium enrichment services contract amendment for Diablo Canyon Power Plant (DCPP) with URENCO Ltd. This review is in accordance with the process established in the Nuclear Fuel Procurement Plan, a part of PG&E's Conformed 2006 Long-Term Procurement Plan, which was approved by the CPUC in Resolution E-4177, dated June 26, 2008.

BACKGROUND

Uranium enrichment is part of the nuclear fuel cycle in a nuclear power plant.

The uranium used in nuclear fuel needs to be enriched in order to produce energy for commercial power generation. Natural uranium, which is mined as an ore, consists primarily of two uranium isotopes, 0.7% U-235 and 99.3% U-238. The concentration of U-235, which is the fissionable isotope of uranium, needs to be increased to 3 to 5 percent in order to sustain a nuclear chain reaction and be used as a nuclear fuel in a commercial nuclear power plant. Enriched uranium can then be manufactured into fuel pellets that are inserted into rods forming a fuel assembly that are inserted into the reactor vessel for subsequent fission and release of energy.

Enrichment can be performed either by gaseous diffusion or gas centrifuge methods.

The principal methods for performing uranium enrichment are by use of gaseous diffusion or gas centrifuges.

The uranium ore is milled and processed into a uranium oxide powder U_3O_8 , which is commonly called yellowcake. The uranium powder is then converted to a gaseous form by combining it with fluorine to create uranium hexafluoride (UF_6). In gaseous diffusion, the UF_6 is subsequently passed through many stages of barriers that separate the uranium isotopes. This process allows the U-235 isotopic concentration to be increased to the desired enrichment concentration level. In the United States, gaseous diffusion plants have operated in Oak Ridge Tennessee, Paducah Kentucky, and Piketon Ohio. Currently, the only fully operating gaseous diffusion enrichment plant in the United States is in Paducah Kentucky.

Another method to enrich uranium is by using gas centrifuges. Gas centrifuges spin the UF_6 gas at extremely high speeds, which separate the uranium isotopes by pulling the heavier U-238 further outward because of its greater momentum. Gas centrifuges have been used successfully in Europe and other foreign countries and are now being used in the United States.

The URENCO group is a European nuclear fuel company operating several uranium enrichment facilities at Grosnau in Germany, Capenhurst in the United Kingdom, and at Almelo in the Netherlands.

URENCO supplies nuclear power stations in about 15 countries in Europe and other locations. Worldwide, URENCO has approximately a 25% share of the market for uranium enrichment services. All of the URENCO plants use the centrifuge enrichment technology. URENCO Ltd., the British subsidiary under the parent URENCO conglomerate, is located in Capenhurst, near Chester in the northwest of England. The site operates three plants producing enriched uranium.

In the United States a URENCO USA facility located in New Mexico became operational in Spring 2010.

The URENCO USA facility is located about 5 miles east of Eunice, New Mexico, and is operated by Louisiana Energy Services (LES), a subsidiary of URENCO Ltd.. Within its portfolio, PG&E has a separate long-term contract with URENCO USA.

There are two other companies that are planning to construct and operate gas centrifuge uranium enrichment facilities in the United States. The U.S. Enrichment Corporation (USEC) intends to have a gas centrifuge facility in Piketon Ohio in proximity to the existing gaseous diffusion plant. AREVA, part of the French public multinational industrial conglomerate that is mainly known for nuclear power, is planning on constructing and operating an enrichment facility called Eagle Rock Enrichment Facility (EREF) located near Idaho Falls Idaho. The EREF is expected to be operational by 2014, with full production capacity by 2019.

Worldwide, additional suppliers for uranium enrichment services include the Russian company Techsnabexport (TENEX). Under an agreement between the USEC and its Russian counterpart TENEX, the United States purchases highly enriched (90% U-235) weapons grade uranium from Russia that has been down-blended to low-enriched uranium (3%-5% U-235) for use in U.S. commercial reactors. There are also several small suppliers of uranium enrichment services that supply enriched uranium for domestic use in Japan, China, India, Brazil, Pakistan and Iran.

PG&E's approved Nuclear Fuel Procurement Plan includes guidelines for pursuing activities which were outside the scope of the Plan.

In June 2008, the Commission issued Resolution E-4177, which approved PG&E's Conformed 2006 Long-Term Procurement Plan. PG&E's Nuclear Fuel Procurement Plan, which is covered by the approved Procurement Plan, includes guidelines for pursuing activities outside the scope of the plan. The Nuclear Fuel Procurement Plan approved activities and services related to the purchase of uranium ore, conversion to the gaseous UF₆, and uranium enrichment for up to 15 years forward for deliveries beginning no later than 2016. In cases where PG&E pursues a transaction outside the scope of the Nuclear Fuel Procurement Plan, PG&E needs to follow an expedited advice letter process to obtain Commission pre-approval of a specified transaction. Since PG&E is pursuing an amendment to its long-term uranium enrichment contract with URENCO Ltd. for a time period beyond the scope of its approved Nuclear Fuel Procurement Plan, PG&E filed AL 3737-E.

NOTICE

Notice of AL 3737-E was made by publication in the Commission's Daily Calendar. PG&E states that a copy of the Advice Letter was mailed and distributed in accordance with General Order 96-B.

PROTESTS

There were no protests to PG&E's Advice Letter 3737-E.

DISCUSSION

URENCO has a proven track record of providing nuclear fuel services to the nuclear power community both in the US and abroad.

URENCO is an important and leading company in the nuclear fuel industry. With several locations worldwide, URENCO appears to have committed substantial resources and assets to ensure the continuity of nuclear fuel availability. URENCO and its subsidiaries have access to its overseas parent affiliates, and have worldwide expertise and a presence in many countries worldwide.

PG&E is pursuing an extension of existing contracts for uranium fuel, conversion, and enrichment services beyond 2010 to address the limited supply situation in the current nuclear fuel services market.

To ensure a continued supply of nuclear fuel for its DCCP units, PG&E is pursuing an extension of existing contracts for its uranium ore, conversion, and enrichment services. Previously, PG&E executed a contract with URENCO Ltd. for delivery of enriched uranium from 2006 through the end of 2010. Under an amendment to the contract, deliveries of enriched uranium would resume in 2014 and continue through 2023.

According to PG&E in AL 3737-E, "Procurement of services from Urenco will complement previously procured services for PG&E's nuclear fuel portfolio, such as those of Areva Enrichment Services, LLC, approved in Resolution E-4322."

The Long-Term Procurement Plan provides guidelines for transactions outside the scope of the Plan. PG&E's AL 3737-E is in accordance with the guidelines of its Nuclear Fuel Procurement Plan for pursuing activities outside the scope of the Plan.

PG&E's approved Nuclear Fuel Procurement Plan covered targets for each of the nuclear fuel cycle segments for uranium ore, conversion to the gaseous hexafluoride, and uranium enrichment services from 2007 through 2016.

The Procurement Plan also provides guidelines for activities outside the scope of the approved Plan, stipulating that PG&E should submit advice letters to the Commission for expedited review and approval.

PG&E is entering into an amendment to extend a contract with URENCO Ltd. for uranium enrichment services for a delivery period 2014 through 2023. Since these years are beyond the scope of the currently-approved Procurement Plan, PG&E submitted advice letter (AL) 3737-E to the CPUC. The filing of this advice letter is appropriately within the guidelines set forth by the approved Procurement Plan.

The terms of the PG&E contract amendment for uranium enrichment services with URENCO Ltd. are just and reasonable.

We have reviewed the contract amendment between PG&E and URENCO Ltd. for uranium enrichment services, which was attached as a Confidential Appendix to AL 3737-E.

PG&E's contract amendment with URENCO Ltd. addresses various scenarios and factors. When compared against PG&E's approved Nuclear Fuel Procurement Plan, we find PG&E's amendment to its URENCO Ltd. contract and its terms and conditions to be just and reasonable to provide a reliable and cost-effective long term fuel supply for DCP.

In AL 3737-E, PG&E requested confidential treatment of the Appendices to the advice letter filing that contain pricing and terms of the contract.

AL 3737-E contains two appendices: Appendix A is a summary of the contract amendment with URENCO Ltd., and Appendix B is the contract amendment. PG&E requests that these two appendices be treated and maintained as confidential, under General Order 66-C and Public Utilities Code Section 583.

Since the PG&E contract amendment with URENCO Ltd. contains pricing and terms and conditions information, disclosure of this information would not be in the public interest. Accordingly, the Commission notes that Appendices A and B of AL 3737-E shall be maintained as confidential.

PG&E's request in AL 3737-E should not increase PG&E's revenue requirements above what would be expected for procurement of nuclear fuel materials and services during the contract period.

According to PG&E in AL 3737-E, "The long-term Urenco contract for enrichment services contains favorable pricing terms that are both consistent with the pricing approved by the Commission in the Nuclear Fuel Supply (sic Procurement) Plan and are competitive with those offered by other suppliers of long-term uranium enrichment services."

Further, our review confirms that the pricing of the PG&E contract amendment with URENCO Ltd. is consistent with what would be expected for procurement of nuclear fuel materials and services during the contract period based upon

PG&E's approved Nuclear Fuel Procurement Plan. Thus, the contract amendment should not increase PG&E's revenue requirements above what would be expected for procurement of uranium enrichment services during the contract period.

The actual contract amendment prices and terms are confidential.

COMMENTS

Public Utilities Code section 311(g) (1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Accordingly, this draft resolution was mailed to parties for comments, and is placed on the Commission's agenda no earlier than 30 days from the date issued for comment.

Timely comments on draft Resolution E-4398 were received from PG&E on April 1, 2011. The comments, which are editorial in nature, are incorporated in this resolution.

FINDINGS AND CONCLUSIONS

1. PG&E filed AL 3737-E on September 21, 2010 requesting Commission review and approval of a long-term Uranium Enrichment Services contract amendment for DCPD with URENCO Ltd.
2. URENCO Ltd. is a British subsidiary of URENCO, a leading world-wide nuclear vendor and supplier of uranium enrichment services.
3. URENCO Ltd. has a proven track record of providing nuclear fuel services for nuclear power plants, both in the U.S. and abroad.
4. Uranium enrichment is part of the nuclear fuel cycle for fuel in a nuclear power plant.
5. The principal methods for performing uranium enrichment are by use of gaseous diffusion or gas centrifuges.
6. In the United States, gaseous diffusion plants have operated at Oak Ridge in Tennessee, Paducah in Kentucky, and Piketon in Ohio.

7. Gas centrifuges have been used successfully in Europe and other foreign countries, and now in the United States with the startup of LES.
8. PG&E's CPUC-approved Nuclear Fuel Procurement Plan anticipated activities and services related to the purchase of uranium ore, conversion to the gaseous UF₆, and uranium enrichment for the time period 2007 through 2016.
9. The Long-Term Procurement Plan provides guidelines for PG&E's pursuing transactions outside the scope of the Plan.
10. To ensure a continued supply of nuclear fuel for its DCCP units, PG&E is pursuing extensions of existing contracts for its uranium ore, conversion, and enrichment services beyond 2010.
11. Since PG&E is pursuing a long-term uranium enrichment contract amendment with URENCO Ltd. for a time period beyond the scope of its approved Nuclear Fuel Procurement Plan, PG&E filed AL 3737-E in accordance the guidelines established in that plan.
12. Previously, PG&E executed a contract with URENCO Ltd. for uranium enrichment services from 2006 through the end of 2010.
13. In its AL 3737-E, PG&E is seeking Commission authorization to extend its uranium enrichment services contract with URENCO Ltd. for a long-term period beyond 2014.
14. The PG&E contract amendment for uranium enrichment services with URENCO Ltd. is just and reasonable when compared against PG&E's approved Nuclear Fuel Procurement Plan.
15. When compared against PG&E's approved Nuclear Fuel Procurement Plan, PG&E's contract amendment with URENCO Ltd. should not increase PG&E's revenue requirements above what would be expected for procurement of uranium enrichment services during the contract period.

16. In accordance with the provisions regarding confidentiality under GO 66-C and Public Utilities Code Section 583, Appendices A and B of AL 3737-E that contain pricing and contract terms should be maintained as confidential.

THEREFORE IT IS ORDERED THAT:

1. Pacific Gas and Electric Company's (PG&E) request for Commission review and approval of the amendment extending the contract with URENCO Ltd. for long-term uranium enrichment services for the Diablo Canyon Power Plant is approved.
2. Appendix A, the contract amendment summary, and Appendix B, the URENCO Ltd. contract amendment attached to AL 3737-E shall be maintained as confidential.

This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on April 14, 2011; the following Commissioners voting favorably thereon:

/s/ Paul Clanon

Paul Clanon
Executive Director

MICHAEL R. PEEVEY
PRESIDENT

TIMOTHY ALAN SIMON

MICHEL PETER FLORIO

CATHERINE J. K. SANDOVAL

MARK FERRON

Commissioners