



RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

2001-0020

1

RESPONSE TYPE



FINAL



PARTIAL

REQUESTER

Richard Miller

DATE

FEB 21 2001

PART I. -- INFORMATION RELEASED

No additional agency records subject to the request have been located.

Requested records are available through another public distribution program. See Comments section.

APPENDICES

Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.



APPENDICES

A

Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.

Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.



APPENDICES

A

Agency records subject to the request are enclosed.

Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.

We are continuing to process your request.

See Comments.

PART I.A -- FEES

AMOUNT *

You will be billed by NRC for the amount listed.



None. Minimum fee threshold not met.

\$

You will receive a refund for the amount listed.



Fees waived.

* See comments for details

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

No agency records subject to the request have been located.



Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.



This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

PART I.C COMMENTS (Use attached Comments continuation page if required)

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Card Ann Reed

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

PART II.A -- APPLICABLE EXEMPTIONS

- APPENDICES**
A Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).
- Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
- Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
 - Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
 - 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- ✓ Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
- ✓ The information is considered to be confidential business (proprietary) information.
 - The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
 - The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
- Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
 - Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
 - Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
- (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
 - (C) Disclosure would constitute an unwarranted invasion of personal privacy.
 - (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
 - (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
 - (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- OTHER (Specify)

PART II.B -- DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL EDO SECY IG
Sandra M. Joosten	Executive Assistant, Office of the Secretary	Appendix A	✓

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

**APPENDIX A
RECORD BEING WITHHELD IN PART**

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u>
1.	08/24/01	SECY-00-0181: United States Enrichment Corporation Financial Review, with attachments. (134 pages total - 68 pages released) EX. 4

POLICY ISSUE INFORMATION

August 24, 2000

SECY-00-0181

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: UNITED STATES ENRICHMENT CORPORATION FINANCIAL REVIEW

PURPOSE:

The purpose of this paper is to provide the results of the Nuclear Regulatory Commission (NRC) staff's financial review of the United States Enrichment Corporation (USEC).

SUMMARY:

In response to the downgrading of USEC's corporate credit rating and other financial changes since February 2000, the NRC staff performed a financial review of USEC based on information provided by USEC and other public sources. The staff's review selected and evaluated the following scenarios:

1. Continued operation of two gaseous diffusion plants.
2. Operation of one gaseous diffusion plant.
3. Deployment of advanced enrichment technology.
4. Brokering Russian downblended uranium and closure of both gaseous diffusion plants.
5. Cessation of all operations.
6. Acquisition of USEC by another party.

CONTACT: Timothy Johnson, FCSS/NMSS
(301) 415-7299

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 4
FOIA- 2001-0020

All

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Portions withheld - EX 4

The review indicates a range of economic performance for the various scenarios and the dependence of performance on key business decisions by USEC over the next 5 to 10 years.

BACKGROUND:

Under Section 193(f) of the Atomic Energy Act of 1954, as amended, and as implemented in 10 CFR 76.22(b)(2), the NRC may not issue a certificate of compliance to USEC or its successor if it finds that issuance of the certificate would be inimical to the maintenance of a reliable and economical source of domestic enrichment services. When NRC recertified USEC's operation of the gaseous diffusion plants in January 1999, USEC had investment-grade credit ratings from both Moody's Investors Service (Moody's) and Standard & Poor's (S&P). On February 3, 2000, USEC announced: lower financial projections for Fiscal Year (FY) 2001 (USEC's FY begins on July 1 and ends on June 30); a plan to lay off 850 employees (later revised to 625); a dividend rate cut to half of its previous value; and a program to repurchase stock. On the next day, February 4, 2000, S&P reacted to this announcement by downgrading USEC's credit rating from BBB to BB+, a less than investment-grade, or speculative, rating. On February 23, 2000, Moody's downgraded USEC from Baa1 to Ba1, also a speculative-grade rating. With regard to AEA §193(f)(2)(B) considerations, NRC's recertification of USEC in early 1999 was based on USEC's investment-grade credit ratings. In a memorandum to the Commission dated March 13, 2000, the staff presented information on the financial status of USEC and indicated it would initiate a re-evaluation of USEC's economics and reliability in accordance with draft NUREG-1671, "Standard Review Plan for the Recertification of the Gaseous Diffusion Plants" (SRP).

Since the USEC privatization on July 28, 1998, USEC has faced several difficult issues that have resulted in substantially lower projected earnings, beginning in the USEC FY 2001. These issues include: (1) an oversupply of uranium on the world market; (2) an agreement with the U.S. Department of Energy (DOE) to purchase Russian downblended high-enriched uranium (HEU), which is currently at above-market prices; (3) use of older and less efficient enrichment technology; and (4) failure of the Atomic Vapor Laser Isotope Separation (AVLIS) process to become a viable technology for future, more efficient uranium enrichment. The current market price of enrichment services is about \$80 per separative work unit (SWU). This price is below the current price of SWU purchased from Russia under the HEU downblending agreement (\$88/SWU) and

and from the sale of uranium inventories that were transferred to USEC from the DOE at the time of privatization.

The long-term contracts, however, will expire in the next several years, and USEC will be forced to negotiate new contracts at prices consistent with the current market prices at that time.

At the time of privatization, USEC was expected to replace its 50-year-old gaseous diffusion plants with the AVLIS enrichment technology that would be capable of producing SWU at well below the current market prices. In June 1999, USEC announced that it was suspending research and development on AVLIS because it considered that the technology was incapable

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of practical, full-scale production levels at competitive prices. Without a more competitive enrichment technology, USEC's ability to compete at today's market prices will be challenged.

In FY 2000 (which ended on June 30, 2000), USEC expected to sell about 12.7 million SWU. Of this, USEC obtained about 5.5 million SWU from the Russian HEU agreement with the remainder coming from its enrichment plants at Portsmouth and Paducah and sales from its inventory. At this production level, USEC will be operating the two gaseous diffusion plants at about 25 percent capacity.

It is our understanding that some investment firms have been urging USEC to shut down one of its plants. As indicated in the NRC staff memorandum to the Commission dated March 13, 2000, under the "Agreement Regarding Post-Closure Conduct," between USEC and the Department of Treasury, the downgrading of USEC's corporate credit rating to below an investment-grade level may allow USEC to close one of its plants before January 1, 2005. On June 21, 2000, USEC announced its intent to close the Portsmouth plant.

DISCUSSION:

NRC staff, with the technical assistance of ICF Consulting, Inc. (ICF), evaluated the projected financial condition of USEC for the next 5-year period, consistent with the guidance published in the draft SRP. The SRP includes an examination of the credit strength and financial condition based on credit ratings from rating services such as Moody's and S&P. Under the SRP, a speculative credit rating could be acceptable based on additional analysis of business plans, projected financial statements, and other information applicable to the critical issues affecting USEC.

NRC staff tasked ICF to evaluate the above issues in accordance with draft NUREG-1671. To gather relevant information for the analysis, on February 25, 2000, NRC staff requested USEC to provide business plans and financial statements for the next 5 years. NRC staff and ICF also used publicly available information in Securities and Exchange Commission 10-K and 10-Q reports and other publicly available investment sources. On April 14, 2000, USEC provided financial information in response to the NRC staff request. On May 1, May 8, June 5, and June 23, 2000, USEC provided additional information to clarify and supplement the April 14, 2000, submittal. USEC provided some information only through 2003, the date the gaseous diffusion plant certificates are due to expire. NRC and ICF made appropriate assumptions based on the information provided for the follow-on years and modeled USEC finances beyond 2005 to better understand long-term trends. For purposes of analysis and comparison, ICF and the staff examined USEC's financial situation to characterize USEC's current and projected future condition under various scenarios. Neither ICF nor the staff have attempted to determine how or whether "economical" or "reliable" might be defined, and the staff has not drawn any conclusions on the matter.

Based on the USEC-provided information and NRC staff and ICF assumptions, ICF prepared a report entitled, "Financial Evaluation of USEC, Inc." (See attachment.) The ICF report presents

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an analysis of USEC's financial conditions under six primary scenarios. These scenarios are as follows:

1. Continued operation of two gaseous diffusion plants.
2. Operation of one gaseous diffusion plant.
3. Deployment of advanced enrichment technology.
4. Brokering Russian downblended uranium and closure of both gaseous diffusion plants.
5. Cessation of all operations.
6. Acquisition of USEC by another party.

Scenarios 1 - 4 all include distribution of Russian origin uranium produced from downblending HEU.

For each of the above scenarios, ICF prepared pro forma financial statements and computed net present values. The net present value analysis method is a common approach used by businesses to compare future earnings under various scenarios. Businesses use the results to select the most profitable business options. ICF also prepared sensitivity analyses on key parameters. These analyses showed the following:

1.

2.

3.

4.

5.

The staff has not provided and does not intend to provide, the data and assumptions used in the draft report to USEC for its review for accuracy. The staff does not believe such a review is necessary due to the confidence in its understanding of the data based on multiple meetings with USEC and submittals from USEC that provided sufficient opportunity for clarification in advance of inclusion of data in the analysis.

COORDINATION

This paper has been coordinated with the Office of the General Counsel, which has no legal objection.

/RA by Frank J. Miraglia for/

William D. Travers
Executive Director
for Operations

Attachment:
ICF Consulting Report,
"Financial Evaluation of USEC, Inc."

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5. Liquidation by USEC itself (Scenario 5) or acquisition and liquidation of USEC by another entity (Scenario 6) become a risk at the end of July 2001 (when ownership restrictions expire) if USEC's stock price per share remains below the break-up value per share.

The staff has not provided and does not intend to provide, the data and assumptions used in the draft report to USEC for its review for accuracy. The staff does not believe such a review is necessary due to the confidence in its understanding of the data based on multiple meetings with USEC and submittals from USEC that provided sufficient opportunity for clarification in advance of inclusion of data in the analysis.

COORDINATION

This paper has been coordinated with the Office of the General Counsel, which has no legal objection.

William D. Travers
Executive Director
for Operations

Attachment:
ICF Consulting Report,
"Financial Evaluation of USEC, Inc."

DOCUMENT NAME: C:\SP00-0181.wpd
ADAMS: Accession Number: ML003736018 * See Previous Concurrence

OFC	SPB*		SPB*		SPB*		Tech. Ed.*		OGC*	
NAME	TJohnson:cc		MGalloway		MTokar		EKraus <small>(via E-mail comments)</small>		KCyr <small>(by Joe Gray for, NLO)</small>	
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OFC	FCSS*		OCA		NMSS		DEDMRS		EDO	
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FINANCIAL EVALUATION OF USEC, INC.

Prepared for the
U.S. NRC
OFFICE OF NUCLEAR MATERIALS,
SAFETY, AND SAFEGUARDS

Prepared by
ICF CONSULTING

August 23, 2000



~~** Contains proprietary information. Not for distribution outside of NRC **~~

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Appendix 1: Results by Scenario

Appendix 2: Sensitivity Analysis by Subscenario

Note: This report reflects analysis of information that was provided to NRC on a confidential basis and that would be unavailable from other sources. As such, the analysis and results reflect proprietary information. In addition, the subject and findings of this report are of a sensitive nature and could result in negative consequences if released.

EXECUTIVE SUMMARY

Introduction

As a condition of the privatization of the U.S. Enrichment Corporation (USEC), the 1996 USEC Privatization Act required NRC to determine whether issuance of a certificate of compliance to the privatized entity would be consistent with the "maintenance of a reliable and economical source of domestic enrichment services." NRC's draft *Standard Review Plan for the Recertification of the Gaseous Diffusion Plants* ("the draft SRP") indicates that this condition is met if an applicant's financial condition is sufficiently strong "to allow the expectation that [the company] can remain viable for at least five years."¹ The draft SRP states that this determination should be made based on the lowest current actual public credit rating (e.g., from Standard & Poor's Corporation or Moody's Investors Services) or, if actual ratings are not available, on estimated ratings. If the actual or estimated credit rating is of investment grade (AAA, AA, A, or BBB as rated by Standard & Poor's, or Aaa, Aa, A, or Baa as rated by Moody's), then the applicant is presumed to meet the conditions described above. Based on an investment grade rating received from Standard & Poor's during the privatization process, USEC met the above conditions in the draft SRP.²

In February of this year, USEC's public credit ratings were lowered to less than investment grade by both Standard & Poor's and Moody's. Consequently, NRC is re-evaluating

¹ NUREG-1671, Standard Review Plan for the Recertification of the Gaseous Diffusion Plants, Draft Report for Comment, U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, February 1999.

² A proprietary letter indicated that Standard & Poor's post-privatization credit rating for USEC would be A- based on various assumptions and capital structures outlined by the management of USEC.

the issue of whether USEC's financial condition is consistent with the maintenance of a reliable and economical source of domestic enrichment services, and NRC has commissioned this study to assist in the re-evaluation.

Objectives and Methodology

This study examines the economic, financial, and business characteristics of USEC and evaluates the company's cash flow over the next five years. It projects USEC's ability to generate positive cash flows and to enrich uranium at its plants at a cost that is below its selling price of SWU.

The study models USEC's current and future cash flows under six basic scenarios:

- (1) Continued operation of the two gaseous diffusion plants (GDPs);
- (2) Continued operation of only one GDP;
- (3) Continued operation assuming the commercial deployment of advanced enrichment technology;
- (4) Operation of the business as a broker of SWU;³
- (5) Cessation of all operations; and
- (6) Acquisition of USEC to sell its assets.

Results

Exhibit ES-1 summarizes the analysis of Scenarios 1-4 (and variations) relative to the criteria noted above. (Scenarios 5 and 6 each assume that USEC will be liquidated and, consequently, cannot be usefully summarized in terms of production costs or a series of cash flows.)

³ SWU, or "separative work units," represent the units of service that USEC and other enrichment companies sell to their customers. Typically, customers bring their own uranium for enrichment, but they must pay for the enrichment services, as measured in SWU.

Exhibit ES-1
Summary of Findings Under Scenarios 1-4 (and Variations)

Subscenarios	Scenario							
	1. Two GDPs		2. One GDP		3. New Technology		4. Broker SWU	
	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY
Status of GDP Operations								
A. Both GDPs operate								
B. Only Paducah operates								
C. Only Portsmouth operates								
D. No GDPs operate								
Status of Russian Agreement Beginning in 2002								
E. Continue at current price								
F. Continue at market price								
G. Continue at market price								
H. No Russian SWU								
Federal Support for Centrifuge								
I. Loan guarantee, R&D subsidized by DOE								
J. No federal support								

Note: Shading indicates cells that are not applicable to the scenario.

[The main body of the document contains several paragraphs of text that are extremely faint and illegible due to low contrast and scan quality. The text appears to be organized into a list or series of points, with some lines starting with bullet points. A large, dark, horizontal band of noise or heavy scanning artifacts obscures a significant portion of the text in the lower half of the page.]

Conclusions

1. INTRODUCTION AND OBJECTIVES

In the 1992 Energy Policy Act, Congress gave the NRC the responsibility to regulate USEC, then a self-financing government corporation, under a certification of compliance arrangement. In 1996, the NRC issued the first Certificate of Compliance for the gaseous diffusion plants. Also in 1996, Congress enacted the USEC Privatization Act, which included additional requirements for privatization and requirements that the NRC may not issue a certificate of compliance to USEC if it finds that issuance of the certificate would be inimical to the "maintenance of a reliable and economical source of domestic enrichment services."

Chapter 16 of NRC's draft *Standard Review Plan for the Recertification of the Gaseous Diffusion Plants* ("the draft SRP"), approved by the Commission in November 1997, indicates that this condition is met if an applicant's financial condition is sufficiently strong "to allow the expectation that [the company] can remain viable for at least five years."⁴ The draft SRP states that this determination should be made based on the lowest current actual public credit rating (e.g., from Standard & Poor's Corporation or Moody's Investors Services) or, if actual ratings are not available, on estimated ratings. If the actual or estimated credit rating is of investment grade (AAA, AA, A, or BBB as rated by Standard & Poor's, or Aaa, Aa, A, or Baa as rated by Moody's), then the applicant is presumed to meet the conditions described above.⁵ Based on an investment grade rating received from Standard & Poor's during the 1998 privatization process, NRC determined that USEC met the above conditions in the draft SRP.⁶

When NRC recertified USEC's operation of the gaseous diffusion plants in January 1999, USEC had investment-grade credit ratings from both Moody's and S&P, which provided an acceptable financial basis for recertifying the plants. The NRC issued a recertification of the plants for a 5-year period.

⁴ NUREG-1671, *Standard Review Plan for the Recertification of the Gaseous Diffusion Plants, Draft Report for Comment*, U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, February 1999. This document provides NRC's process for conducting the safety review for the recertification of the gaseous diffusion plants.

⁵ Under the SRP, a speculative rating could also be acceptable, but further NRC analysis using additional criteria would be required.

⁶ A proprietary letter indicated that Standard & Poor's post-privatization credit rating for USEC would be A- based on various assumptions and capital structures outlined by the management of USEC. Letter from Scott Sprinzen, Managing Director of Standard & Poor's Corporate Ratings, to Sarah A. Van Lierde, Treasurer of USEC, April 24, 1998.

On February 3, 2000, USEC announced lower financial projections for fiscal year 2001, a plan to lay off 850 employees (subsequently modified to 625 employees), a dividend rate cut to half of its previous value, and a program to repurchase stock. On February 4, 2000, Standard & Poor's reacted to this announcement by downgrading USEC's credit rating from BBB to BB+, a speculative-grade rating. On February 23, 2000, Moody's downgraded USEC from Baa1 to Ba1, also a speculative-grade rating. Consequently, NRC is re-evaluating the issue of whether USEC's financial condition is consistent with the maintenance of a reliable and economical source of domestic enrichment services, and NRC has commissioned this study to assist in the re-evaluation. Reviewing the financial status is consistent with typical NRC practice if the basis for authorizing an activity, such as operating the gaseous diffusion plants, changes sometime after the authorization. NRC believes this review is consistent with the authority Congress provided to the NRC in the USEC Privatization Act of 1996.

The objectives of this analysis are to examine the economic, financial, and business characteristics of USEC, to evaluate USEC's ability to generate positive cash flows, and to assess USEC's ability to profitably enrich uranium at its own facilities.

2. METHODOLOGY

2.1 Overview

The draft SRP states that applicants with less than investment grade credit ratings must be evaluated to determine “whether any economic, financial, or business characteristics . . . exist that provide reasonable assurance of the applicant’s viability for at least five years.” The draft SRP notes three examples of factors that might provide reasonable assurance of the applicant’s viability for at least five years. These factors include contracts adequate to support the applicant’s operations over a five-year time period, financial guarantees provided by a parent company, and compelling business prospects.

This study considers these and other factors as needed to model USEC’s current and future cash flows under six basic scenarios (which are described in greater detail in Section 4):

- (1) Continued operation of the two gaseous diffusion plants (GDPs);
- (2) Continued operation of only one GDP;
- (3) Continued operation assuming the commercial deployment of advanced enrichment technology;
- (4) Operation of the business as a broker of SWU;⁷
- (5) Cessation of all operations; and
- (6) Acquisition of USEC to sell its assets.

For each of these scenarios, the study estimates the direction and magnitude of cash flows over the next five years, and evaluates the cash flow projections to identify foreseeable instances of insolvency or other critical times for the business. The study also considers USEC’s cost of producing SWU relative to the price the company receives for selling SWU.

The study uses a variety of information, including USEC’s audited public filings with the U.S. Security and Exchange Commission (SEC), other financial data and projections provided by USEC, research reports and analyses prepared by federal agencies and by private investment houses, and other published sources. The study cites specific data sources as appropriate and undertakes sensitivity analysis on key variables.

⁷ SWU, or “separative work units,” represent the units of service that USEC and other enrichment companies sell to their customers. Typically, customers bring their own uranium for enrichment, but they must pay for the enrichment services, as measured in SWU.

2.2 Data Sources

The study uses a variety of information, much of which has been provided by USEC, either indirectly through USEC's public filings with the SEC, or directly at the request of NRC for this analysis. SEC filings reviewed included USEC's Form 10-K for fiscal years 1998 and 1999, as well as various Forms 10-Q and 8-K. Information provided in 10-K's includes audited financial data. The auditor's opinion on USEC's financial statements for 1998 and 1999 is clean, thereby ensuring that a certified public accountant believed that the financial statements fairly present the company's financial condition in accordance with generally accepted accounting principles. Thus, the financial statements provide an independently audited and detailed set of financial data as necessary for conducting in-depth analysis of the company's future business prospects.

USEC voluntarily supplemented the publicly-available information by responding to various information requests from NRC. This supplemental information included the following:

- Information package submitted on April 14, 2000;
- USEC meeting with NRC staff and ICF staff on April 20, 2000;
- Information package submitted on May 1, 2000;
- Information package submitted on May 8, 2000;
- USEC meeting with NRC staff and ICF staff on May 15, 2000;
- Information package submitted on June 5, 2000; and
- Information package submitted on June 23, 2000.

Several USEC staff attended each meeting, including USEC's chief financial officer (CFO) Mr. Henry Shelton, and Mr. James Miller, an executive vice president. USEC has asserted that most or all of the information originating from these submittals and meetings is highly proprietary in nature. Consequently, the analysis and conclusions contained in this study also should be considered proprietary.

This study has researched independently a variety of claims and assumptions contained in the USEC data. NRC staff have assisted with this effort by, in particular, contacting staff of other federal agencies. The results of this research are documented in the report. Nevertheless, given the highly detailed and proprietary nature of the topics examined in this study, most of USEC's data cannot be obtained from other sources. The study, however, does consider the sensitivity of the results to changes in key parameters, including certain data provided by USEC.

2.3 Cash Flow Model

The term "cash flow" refers to the amount of net cash generated by, or used by, a company in a given year (i.e., total cash receipts minus total disbursements). Firms that generate *positive* cash flows are successfully meeting their obligations and providing extra cash that can be used to operate the enterprise or returned to shareholders. Firms that generate *negative* cash flows are net users of cash; although they may be able to meet their expenses in the short term (e.g., through cash reserves or credit), they will not be able to finance operations in the long term if cash flow remains negative. A declining firm would generally be expected to stay in business only as long as cash flow remains positive; assuming there is no expectation that financial performance will improve in the future, the firm would be expected to cease operations just as cash flow becomes negative.

The cash flow model designed for this study leverages available information regarding USEC to project the company's financial performance under each of the six main scenarios and under a variety of subscenarios. It accounts for USEC's revenues (i.e., sales of SWU and uranium) and costs (including costs of GDP production, Russian purchases, outsourced downblending, research and development, new plant construction, taxes, etc.) and models the company's cash flows, cash balances, and net income.

The model projects cash flows for each scenario and subscenario in the near term (i.e., in the next 5 years). Trends and turning points in the cash flows are identified to inform the analysis and better understand the company's key financial issues.

3. CRITICAL FINANCIAL ISSUES, VULNERABILITIES, AND UNCERTAINTIES

This section identifies and analyzes the financial issues, vulnerabilities, and uncertainties that are most critical to USEC's financial condition. It includes preliminary findings that influenced both the definition of the scenarios and the assumptions used in the cash flow model.

3.1 Declining SWU Prices

Most of USEC's sales result from long-term contracts. USEC negotiates these contracts with its customers based on prevailing prices and forward escalation rates. In recent years, however, prices for SWU have declined substantially, primarily due to industry overcapacity, liquidation of stockpiles, lower production costs among competitors, and currency rate variations (SWU prices are set in U.S. dollars). The spot price for SWU, which was as high as \$98 in 1998, has fallen to about \$80 per SWU at present.⁸ USEC's average selling price per SWU, therefore, is declining as its older, higher-priced contracts are gradually replaced by newer, lower-priced contracts.

⁸ Sources: U.S. Department of Energy's Energy Information Administration (EIA); the Ux Consulting Company, LLC, and the Uranium Exchange Company, April 3, 2000.

3.2 GDP Plant Production

USEC operates two gaseous diffusion plants (GDPs). The plant in Paducah, Kentucky, has operated since 1952 and has a design capacity of 11.3 million SWU per year. It currently is certified to enrich uranium only up to 2.75 percent. The plant in Portsmouth, Ohio, has operated since 1956 and has a design capacity of 7.4 million SWU per year. The Portsmouth plant currently is certified to enrich uranium up to 10 percent. Nuclear fuel typically is enriched to about 5 percent.¹⁰

Production costs at the two GDPs vary considerably based on the level of production and the cost of electricity (which itself varies by season).

⁹ Washington Post, "Euro Falls to New Low Despite Bank's Action," by Anne Swardson, April 28, 2000, page E3. The value of the euro is not significantly different today, despite some fluctuation since the end of April.

¹⁰ Currently, USEC employs the two GDPs in sequential fashion. The process begins at the Paducah facility (which is certified to enrich uranium only to 2.75 percent) and is completed at the Portsmouth facility.

¹¹ According to the U.S. Department of Energy's Energy Information Agency, domestic demand for enrichment services was 10.0 million SWU in 1999 (*Uranium Industry Annual*, DOE/EIA-0478(99), Table 25, May 2000) and is projected at between 9.3-10.4 million SWU between 2000-2005 (http://www.eia.doe.gov/cneaf/nuclear/n_pwr_fc/data98/table4.html).

¹²

Currently, USEC operates each of the two GDPs at approximately 25 percent of capacity.¹⁴

¹³ USEC has announced its intention to close the Portsmouth GDP in June 2001.

¹⁴ The remaining SWU supplied by USEC comes from USEC's inventories and from Russian SWU (as discussed in Section 3.3).

¹⁵ Source: ICF analysis of data provided by USEC.

Operation of the GDPs requires freon (R-114) as a process coolant and, due to leakage, USEC adds to the two plants approximately 750,000 pounds (total) of freon annually (a six percent leakage rate).

This issue is critical because the GDPs cannot operate without a suitable process coolant. If a new coolant cannot be identified, operations at the GDPs will not be able to continue indefinitely or might require expensive plant upgrades. Similarly, GDP production costs would rise further if a replacement coolant is available but proves to be significantly more expensive than freon.

3.3 Russian HEU Agreement

As the Executive Agent for the Russian HEU agreement, USEC is obligated to purchase certain amounts of Russian SWU each year, subject to cancellation of the contract. USEC currently pays \$88 per SWU, increasing to \$90 per SWU in 2001, at which time the current pricing agreement expires. USEC is currently negotiating prices for the next five years of the agreement (2002-2007).

However, the price for Russian SWU has been, and may still be, higher than the *marginal cost*¹⁸ (as opposed to the average cost) of producing SWU at the GDPs, which means

¹⁶ Evaluating the adequacy of the two substitutes, _____ is beyond the scope of this study. In general, it is difficult to predict the performance of compounds as refrigerants based on physical properties, absent real-time testing.

Other users of freon are evaluating other compounds, including isomers of hexafluoropropane, but the specific applications of these other users may differ from those of USEC.

¹⁷ _____

¹⁸ The term "marginal cost" is used to mean the incremental cost of the last SWU produced or the first unit subtracted from production. USEC's high fixed costs result in a high average cost

that USEC would have been financially better off had it produced, rather than purchased, the same quantity of SWU.

Given existing trade restrictions and Russia's need for U.S. dollars, it seems likely that USEC will achieve an agreement to continue purchasing Russian SWU.

NRC also has learned that some unresolved issues remain and therefore it is uncertain when negotiations will conclude.²⁰

3.4 Inventories

At the end of FY 2000, USEC is estimated to have approximately \$1.7 billion in inventory on its books, which is currently in the form of U.S. HEU, natural uranium, and low enriched uranium (LEU), but which will be sold primarily as SWU and natural uranium. Much of this inventory was transferred to USEC from the DOE during the privatization process and can be sold under certain restrictions defined in the USEC Privatization Act and in a 1998 DOE Secretarial Determination. In addition, USEC also has inventory that is not covered by sales restrictions. This large inventory provides USEC significant flexibility in how it operates the

per SWU. The incremental (or "marginal") cost of producing additional SWU, however, is substantially lower than the average cost.

¹⁹ Source: NRC meetings with USEC staff on April 20 and May 15, 2000. USEC emphasized that information regarding expected outcomes (e.g., prices, volumes) of the negotiations should be considered confidential and proprietary.

²⁰ Telephone conversation between Jeff Hughes, Assistant to Under Secretary Moniz, U.S. Department of Energy, and Tim Johnson, NRC/NMSS, on May 23, 2000.

business. For example, inventory can be sold when that is more cost effective than producing additional SWU. The following paragraphs discuss each type of inventory in more detail.

USEC has rights to sell approximately \$300 million worth of SWU from downblended U.S. HEU.²¹

Because USEC is not licensed to handle HEU, the downblending is contracted to another licensee.

SWU inventory from sources other than U.S. HEU is about \$650 million or approximately 8 million SWU.

Additional SWU inventory allows USEC to vary production at the GDPs based on seasonal variations in electricity prices.

The natural uranium (unenriched UF_6) inventory of approximately 25,000 metric tons has an estimated value of \$750 million.

3.5 New Enrichment Technologies

USEC is currently investigating the commercial development of at least two technologies as potential replacements for the gaseous diffusion process.

- The gas centrifuge process is a well-understood technology used by a number of other enrichment service providers. Investment in a gas centrifuge plant would allow USEC to provide enrichment services at costs at, near, or below those of its competitors.

²¹ The estimate is based on USEC selling 3.1 million SWU at an average price of \$96.80 per SWU.

²²

- The SILEX process involves a new laser-based technology. Assuming the technology works and can be made financially feasible, SILEX might enable USEC to leapfrog its competitors in terms of operating costs.

Neither technology can be implemented immediately.

A SILEX-based process would likely take several additional years, assuming it proves feasible, but uncertainties surrounding SILEX make further consideration of the technology too speculative to analyze in the framework of the current cash flow analysis. This study, therefore, considers only an investment in a centrifuge plant, with ongoing research and development expenses for SILEX.

3.6 Dividends Policy and the Share Repurchase Program

On February 3, 2000, USEC announced that it was simultaneously (1) lowering its financial projections for FY 2001, (2) planning to lay off 850 employees, (3) cutting its dividend payments by half, and (4) enacting a stock buy-back plan. This announcement triggered the downgrading of USEC's bond rating the next day by Standard & Poor's, based in part on USEC's signal that its business prospects do not currently support continued payment of dividends at the same level. USEC's current dividend level is consistent with, approximately, a 12 percent dividend per share, and requires aggregate disbursements of almost \$50 million annually. Under the share repurchase program, USEC expects to repurchase an additional 10 million shares by the end of FY 2001. USEC projects to spend a total of \$188 million during FY 2000 and 2001 to repurchase its stock.

This study has not attempted to evaluate the propriety of these discretionary payments.

3.7 Ownership Restrictions

The Privatization Act prevents any single entity from owning more than 10 percent of USEC through July 2001. After that time, acquisition of USEC may be attractive to certain entities for either strategic/operational reasons or for financial reasons. In general, the acquiring firm would be expected to use its new purchase in a way that maximizes the worth of its own shareholders. Thus, the acquirer may analyze scenarios such as those examined in this study. If there are no synergies between USEC and the acquirer, and if the acquisition results in no change in USEC's operations or investment, then the same scenarios should dominate for the consolidated entity as dominates when USEC is an independent entity.

The relative valuation of scenarios would change if the acquisition were to lead to changes in operations or investments, either for USEC or the acquirer. For example, if a firm

with lower borrowing costs purchased USEC, building a centrifuge plant might become more attractive; this would increase the likelihood that the centrifuge plant would be built. [This study has not evaluated how the issue of borrowing costs affects the valuation of Scenario 6.] Similarly, the valuations of scenarios might differ if synergies exist between USEC and the acquirer.

Identifying potential acquirers and evaluating potential synergies is beyond the scope of this study. Therefore, this study evaluates a scenario in which a third party acquires USEC solely for the financial gain represented by USEC's liquidation or "break-up" value. In such a case, the acquirer calculates the net present value of selling USEC's assets and paying its liabilities. If this value is sufficiently greater than the price at which USEC can be acquired, then the acquisition and liquidation are attractive for any entity that can raise the capital to carry out this plan. Note that this scenario could plausibly occur even if another scenario would result in a higher net present value, as long as USEC's market capitalization (which is USEC's price per share of stock multiplied by the number of shares outstanding) does not reflect the "true" value of USEC's available options (which always includes liquidating itself). In this case, the acquiring firm should be able to achieve a higher return by keeping the business running, but it may be willing to forego the added return if it is able to quickly achieve an adequate return without incurring significant operating risks.

USEC's current market value is approximately \$351 million (or 82.5 million shares at \$4.25 per share).

3.8 Energy Costs

Uranium enrichment at the GDPs requires large amounts of electricity, historically more than 20 million megawatt hours (MWhr) per year at both plants. Power costs represent 55 to 60 percent of USEC's cost of production. USEC has also generated profit in recent years from the sale of electricity back to one of its suppliers ("monetized power").

This study estimated annual energy costs and revenues based on USEC's projections, other USEC documents, and information from the Energy Information Administration (EIA).

²⁶ Source: ICF estimate based on USEC's FY 2000 balance sheet on USEC's web site. This estimate assumes USEC liquidates all inventories and pays off all liabilities.

Energy costs are not modeled explicitly in this study, however, but rather are embedded in broader cost functions (see Section 3.2). The results discussed in this section have been used to verify assumptions made in the cash flow model and as inputs to the sensitivity analysis.

USEC buys power under two types of agreements: guaranteed supply at the utilities' cost of production (firm power) and guaranteed supply at prevailing market rates (non-firm power). In the last several years, USEC has purchased approximately 70 percent of its power as firm power and 30 percent as non-firm power. All power for the Portsmouth GDP is firm power, while the power for the Paducah GDP is typically about 60 percent non-firm.

Given the operating inefficiencies inherent to the GDPs relative to other commercial enrichment technologies, this study is less sensitive to changes in power costs than to other key factors (such as the price of Russian SWU, the number of operating GDPs, and the development of a centrifuge plant).

Power for the Paducah GDP

For the Paducah GDP, USEC buys power from Electric Energy Inc. (EEI) and Tennessee Valley Authority (TVA). USEC has an agreement to purchase up to 60 percent of the power generated at EEI's plant (Joppa Steam) as firm power (approximately 5.5 million MWHrs in 1998) and additional power as non-firm power. USEC also has a new 10-year non-firm power contract with TVA to supply additional power as needed at the Paducah plant.

/ These prices seem reasonable based on data provided by EIA (discussed below). If USEC decides not to purchase any power from EEI, it will incur a demand charge through 2005 when the contract expires. (See discussion of demand charges below.)

Power for the Portsmouth GDP

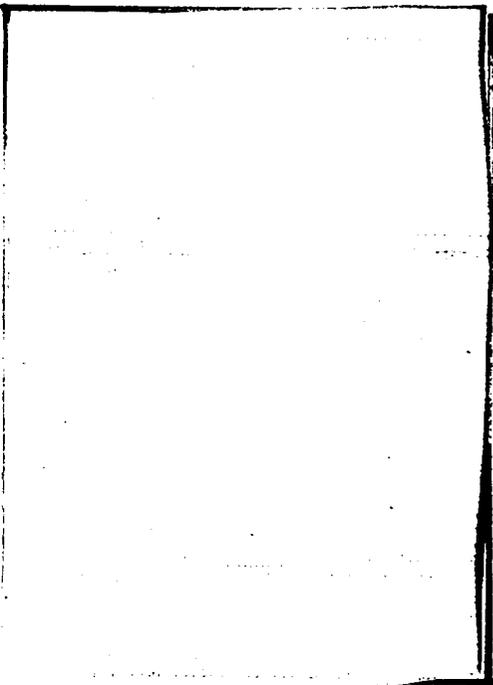
The Portsmouth plant receives all of its power through USEC's contract with Ohio Valley Electric Corp (OVEC), which expires in 2005. According to USEC, the company has a firm power contract for access to as much as 1,900 MW capacity. (USEC's financial documents state

that the contract is for 100 percent of the power generated by OVEC.) In the past 2 years, USEC has used about 60 percent of the total MWHrs available under the contract.

According to information provided by USEC, USEC has notified OVEC of its intention to terminate its contract in 2003. The utility is expected to incur a large cost in 2003 for compliance with environmental regulations. Under the terms of the contract, this cost is passed on to USEC in total, payable in the year the cost is incurred. Because the OVEC contract expires in 2005, USEC would receive little benefit in return for the large capital expenditure.* USEC has indicated that it will not be obligated to pay the demand charge after 2003.

Demand Charges

Demand charges are paid whether or not USEC takes delivery of power. These charges are included as part of the price unless USEC does not purchase any power. USEC provided estimates of these charges for each contract (see Exhibit 3-4). It should be noted that USEC provided much higher estimates of the total demand charges for both contracts in the Company's 1999 10-K. This study used the more recent estimates provided by USEC for this analysis.



EIA Forecasts

EIA has forecasted retail electricity prices for industrial customers through 2020 as part of the Annual Energy Outlook 2000 (AEO2000). EIA projects prices decreasing by an average of 0.6 percent per year from 1998 to 2020 for both the East North Central (ENC) region (including OH and IL) and East South Central (ESC) Region (including KY).²⁸ EIA projects retail electricity prices to industrial customers decreasing an average of 0.4 percent per year from 1998 to 2020 for the East Central Area Reliability Coordination Agreement (ECAR) Region, which includes both KY and OH.²⁹

USEC purchases power at rates closer to wholesale than retail. Because forecasts of wholesale prices are not included in the AEO2000, the study used fuel costs to electricity generators (which are included in the AEO2000) as a proxy for wholesale prices. The cost of producing electricity is a function of fuel costs, operating and maintenance costs, and the cost of

²⁸ Tables 13 and 16 (prices and other information by Census Division).

²⁹ Tables 60 and 63 (prices and other information by NERC Region).

capital. For existing plants, fuel costs typically represent about 80 percent of total operational costs (fuel and operating and maintenance) for a 300-megawatt coal-fired plant and about 90 percent of the total operational costs for a gas-fired combined-cycle plant of the same size in 1997. In the ENC Census Division, EIA forecasted generator fuel prices to decrease an average of 1 percent per year from 1998 to 2006, then increase an average of 1 percent per year from 2006 to 2020, for a total average annual increase of 2 percent from 1998 to 2020.

These forecasts suggest that electricity prices in the regions in which the GDPs are located should not change much over the next 20 years and are likely to decrease slightly through 2006. Prices available to USEC could either decrease or increase slightly after 2006.

Potential Revenue or Offset to Cost

In the summer of FY 1999 and FY 2000, USEC sold unused power back to OVEC as an offset to production costs. USEC refers to this as "monetizing power." According to USEC, the company and OVEC agree on a quantity and price in advance. The quantity has been 700 MW for three months, approximately 1.5 million MWHrs.

USEC announced on May 30, 2000 that it expects to realize a pretax cash benefit of \$44 million, or \$28 million after tax, from a new agreement with OVEC covering power usage for the summer of 2000.

4. DESCRIPTION OF SCENARIOS AND ASSUMPTIONS

4.1 Scenario 1: Continued operation of the two GDPs

This scenario assumes that both GDPs continue to operate.³⁰ It also assumes that USEC reaches a new pricing agreement for continued purchase of downblended Russian HEU, with the agreement taking effect beginning in January 2002. Other scenario-specific assumptions include the following:

- USEC purchases 5.5 million SWU annually through FY 2001.
- USEC incurs research and development expenses associated with SILEX and gas centrifuge technology during the period 2000 to 2005.

For sensitivity purposes, the analysis considers a variation under which purchases of downblended Russian HEU cease at the end of 2001 (if a new pricing agreement is not negotiated). See Section 3.3 for a discussion of issues and assumptions related to the Russian agreement.

4.2 Scenario 2: Continued operation of only one GDP

This scenario assumes that only the Paducah GDP continues to operate, with the Portsmouth plant halting enrichment operations on or before June 30, 2001, as announced by USEC.

See Section 3.2 for a discussion of issues related to GDP operations and viability.

Under a one-plant scenario, USEC would be unable to fulfill its projected contractual demand absent the continued purchase of downblended Russian HEU (or purchase of SWU from other sources). Consequently, this scenario assumes that USEC reaches a new pricing agreement for continued purchase of downblended Russian HEU, with the agreement taking effect beginning in January 2002. For sensitivity purposes, the analysis considers variations under which purchases of downblended Russian HEU cease at the end of 2001 or are accelerated to 8 million SWU annually beginning in FY 2002. See Section 3.3 for a discussion of issues and assumptions related to the Russian agreement.

³⁰ See Section 3.2 for a discussion of issues related to GDP operations and viability.

Other scenario-specific assumptions include the following:

- One GDP plant will be closed as of the beginning of FY 2002 (i.e., July 1, 2001), and the remaining GDP will operate at less than its optimum capacity due to the purchase of Russian SWU.
- USEC purchases 5.5 million SWU annually from Russia through FY 2001

4.3 Scenario 3: Continued operation assuming the commercial deployment of advanced enrichment technology

- USEC reaches a new pricing agreement for continued purchase of downblended Russian HEU, with the agreement taking effect beginning in January 2002. See Section 3.3 for a discussion of issues and assumptions related to the Russian agreement.
- USEC purchases 5.5 million Russian SWU annually through FY 2001,
- The GDP will produce the difference between the sales volume less the Russian purchases, the U.S. HEU-derived SWU, and the centrifuge-plant-produced SWU.
- USEC will not receive a federal loan guarantee on plant-related debt or a partial subsidy for research and development costs associated with the centrifuge plant.

For sensitivity purposes, the analysis considers variations under which one GDP closes beginning in FY 2002 but the other GDP continues enriching uranium indefinitely, and under which no Russian SWU is received beginning in FY 2002. The analysis also considers the effect of bringing the centrifuge plant on-line beginning in FY 2004 rather than FY 2006.

4.4 Scenario 4: Operation of the business as a broker of SWU

In this scenario, USEC is assumed to close both GDPs, but to continue in business as a broker of enrichment services. USEC would retain its current SWU contracts and would continue to market SWU obtained through the Russian agreement and through downblending of U.S. HEU. Other scenario-specific assumptions include the following:

- Both GDPs are closed at the end of FY 2001.
- Revenues are generated by selling natural uranium inventory, SWU inventory, SWU from downblended U.S. HEU, and SWU from the Russian contract.

For sensitivity purposes, the analysis considers a variation under which purchases of downblended Russian HEU are accelerated to 9.3 million SWU annually beginning in FY 2002, thereby shortening the effective life of the Russian agreement such that it would end in approximately 2009. See Section 3.3 for a discussion of issues and assumptions related to the Russian agreement.

4.5 Scenario 5: Cessation of all operations

In this scenario, USEC would liquidate itself by selling its assets (including its inventories and its long-term SWU contracts), paying its liabilities, and returning any net worth to shareholders. Other scenario-specific assumptions include the following:

- Assets will be sold for the values on USEC's balance sheet.

4.6 Scenario 6: Acquisition of USEC to sell its assets

This scenario assumes that USEC is acquired by another corporate entity for its liquidation or "break-up" value. The acquirer purchases a controlling interest in USEC and liquidates the company consistent with Delaware law and USEC's by-laws. USEC's salable and liquid assets include cash, accounts receivable, inventories, and certain prepaid items. This scenario is identical to Scenario 5 (cessation of all operations) except that the liquidation of the company would be initiated by an acquiring entity rather than by USEC itself, and the liquidation

value is reduced by the cost of obtaining USEC's stock. Other scenario-specific assumptions include the following:

- Assets will be sold for the values on USEC's balance sheet.
- Transaction costs are not considered so the valuation of this scenario is overstated.

4.7 Other Assumptions

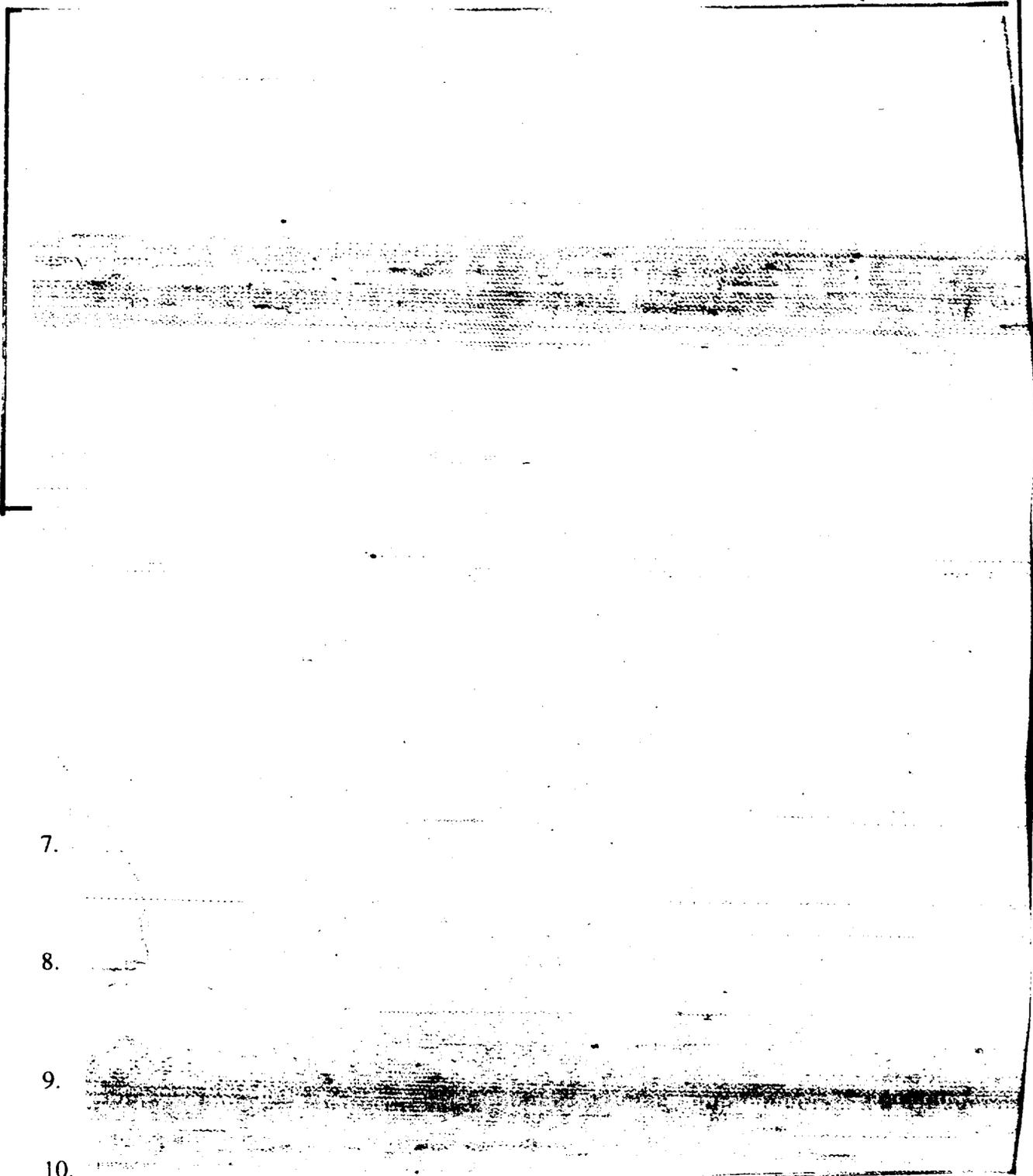
In addition to the scenario-specific assumptions discussed above, the analysis also assumes the following:

Plant Capacities

- 1.
- 2.

Revenues

3. USEC's projected revenue from SWU sales that have already been contracted are firm and will not change enough to warrant including any variability in the analysis.
4. USEC's projected revenue from uranium sales that have already been contracted are firm and will not change enough to warrant including any variability in the analysis.
- 5.
6. Revenue per SWU for the years 2000 to 2005 is based on the current contract backlog reported by USEC and the assumed SWU market price.



7.

8.

9.

10.

the amount of Russian SWU received in the last year that Russian SWU is available is equal to 92 million SWU minus the sum of all previous amounts received.

Expenses

11. The cost of SWU purchased under the Russian HEU agreement is in accordance with the current pricing schedule through FY 2001.

Thus
for FY 2002 the average of the existing contract price and the projected new contract price is used as the cost of Russian SWU. The analysis assumes that one half of the Russian SWU is received in each of the last half of CY 2001 and the first half of CY 2002. Except where noted under a specific scenario, USEC is assumed to purchase all Russian SWU called for under the current Russian HEU agreement.

The cost of Russian SWU used in the analysis in each year is:

FY 2000 - \$87.86
FY 2001 - \$89.90

12. The cost of GDP-produced SWU will vary due to changes in electricity costs. All other costs are assumed to have too small a variation to be included in the analysis.
13. Per SWU production costs at each plant are calculated from plant specific polynomial equations that are based on data supplied by USEC (see Exhibit 3-2). The production cost curves reflect FY 2002 electricity costs.³¹

Adjustments to total production costs are made in each year to account for changes in unit electricity costs.

14.

15.

³¹ USEC stated that the production curves are based on FY 2002 costs during the May 15, 2000 meeting with NRC, USEC, and ICF.

26.

27. The analysis assumes that USEC will spend \$117 and \$71 million in FY 2000 and FY 2001, respectively, for repurchasing stock.

28. Based on press releases issued by the company, USEC will incur special charges of \$80 million in FY 2000 for the closure of Portsmouth above the estimate contained in USEC's April 14, 2000 submittal.

Investments and Financing

29.

30.

31.

Cash Flow Calculations

32. The non-cash expense adjustments (except for depreciation) and changes in account adjustments made to net income to calculate free operating cash flow for years beyond USEC's projections are assumed to decline over time to zero in FY 2007.

33. Cash flows and their net present values are calculated before dividend payments and cash used to repurchase stock.

34. Dividends are assumed to remain at the current value of \$0.55 per share.

35. The number of shares outstanding is expected to fall due to share repurchases. For purposes of calculating dividend payments, shares outstanding are assumed to be 95 million in 2000, 80 million in 2001 and 70 million in 2002 and beyond.

36. The discount rate used to calculate the present value of future cash flows is 10 percent.

5. RESULTS AND SENSITIVITY ANALYSIS

This section describes the study's findings. Section 5.1 individually evaluates each scenario described in Section 4 to determine whether the scenario is consistent with continued positive cash flows. Section 5.2 assesses how the findings of the analysis might change based on a sensitivity analysis of key parameters. Finally, Section 5.3 summarizes the findings of the analysis.

5.1 Evaluation of Individual Scenarios

This study evaluates USEC's financial condition under each scenario by projecting the direction and magnitude of the company's future cash flows. (See Section 2.3 of this report for a discussion of the cash flow model and the use of cash flow as an indicator of firm financial condition.) The study also considers USEC's cost of producing SWU relative to the price the company receives for selling SWU. Each scenario is discussed in turn below. Exhibit 5-1 summarizes the analysis of Scenarios 1-4 (and variations) relative to the criteria noted above. (Scenarios 5 and 6 each assume that USEC will be liquidated and, consequently, cannot be usefully summarized in terms of production costs or a series of cash flows.)

5.1.1 Scenario 1: Continued operation of the two GDPs

Under this scenario, USEC continues to operate both GDPs, and the company successfully renegotiates the Russian agreement. Under Scenario 1, USEC delivers SWU derived from four sources: the GDPs, the Russian agreement, an outsourced downblending of U.S. HEU, and inventory (see the first exhibit in Appendix 1.1).

5.1.2 Scenario 2: Continued operation of only one GDP

Under this scenario, USEC continues to operate only the Paducah GDP and it successfully renegotiates the Russian agreement. USEC delivers SWU derived from four sources: the GDPs, the Russian agreement, an outsourced downblending of U.S. HEU, and inventory (see the first exhibit in Appendix 1.2)

Exhibit 5-1
 Summary of Findings Under Various Scenarios and Subscenarios

Subscenarios	Scenario							
	1. Two GDPs		2. One GDP		3. New Technology		4. Broker SWU	
	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY	FY in which GDP Production Costs Exceed USEC's SWU Selling Price	Cash Flow Positive Through FY
Status of GDP Operations								
A. Both GDPs operate								
B. Only Paducah operates								
C. Only Portsmouth operates								
D. No GDPs operate								
Status of Russian Agreement Beginning in 2002								
E. Continue at current price								
F. Continue at market price								
G. Continue at market price								
H. No Russian SWU								
Federal Support for Centrifuge								
I. Loan guarantee, R&D subsidized by DOE								
J. No federal support								

Note: Shading indicates cells that are not applicable to the scenario.

5.1.3 Scenario 3: Continued operation assuming the commercial deployment of advanced enrichment technology

~~Under Scenario 3, USEC delivers SWU derived from five sources: the GDPs, the new gas centrifuge plant, the Russian agreement, the outsourced downblending of U.S. HEU, and inventory (see the first exhibit in Appendix 1.3).~~

5.1.4 Scenario 4: Operation of the business as a broker of SWU

Under this "broker scenario," both GDPs cease operations beginning in July 2001. USEC liquidates its inventories (of uranium, SWU, and LEU from downblended U.S. HEU) and sells Russian SWU for the duration of the Russian agreement (i.e., through FY 2013).³⁷ USEC also delivers SWU from downblended U.S. HEU through FY 2005. (See the first exhibit in Appendix 1.4.)

~~USEC does not enrich any SWU itself after FY 2001~~
(see the third exhibit in Appendix 1.4).

³⁷ This scenario does not consider the possibility that the Russian agreement might not be renewed in FY 2002 because such the possibility is inconsistent with USEC staying in business as a SWU broker.

in FY 2002.³⁸ Scenario 2c assumes the Russian agreement is not continued so USEC receives no Russian SWU beginning in FY 2002.

- Scenario 4a (which is presented as Scenario 4 in the main body of this report) assumes that USEC receives under the new agreement _____ Scenario 4b assumes that purchases under the agreement are _____ beginning in FY 2002.³⁹ The study does not consider a subscenario where the Russian agreement is not continued because such a subscenario would be inconsistent with USEC staying in business as a SWU broker.
- Scenario 3 is analyzed based on whether or not USEC continues to operate one of the GDPs while building a gas centrifuge plant, and on alternative terms of the to-be-renegotiated Russian agreement.
 - Scenario 3a assumes that a GDP will remain in operation, and that USEC receives under the new agreement _____
 - Scenario 3b (which is presented as Scenario 3 in the main body of this report) assumes that USEC will not operate any GDPs once a gas centrifuge plant becomes fully operational at the beginning of FY 2009. It also assumes that USEC receives under the new agreement _____
 - Scenario 3c is identical to Scenario 3b, but assumes that the gas centrifuge plant will come on line two years earlier (i.e., it will be fully operational by FY 2007).

- Scenario 3d assumes that one GDP remains in operation (as in Scenario 3a), but that the Russian agreement is not continued, so USEC receives no Russian SWU beginning in FY 2002.

The study analyzed the results of these various subscenarios to inform the specification of the scenarios used throughout the main body of the report. Appendix 2 presents results for each of the above subscenarios. Exhibit 5-2 summarizes USEC's SWU production capacity under various scenarios and subscenarios.

The second way in which the study considers sensitivity is by individually varying key parameters to identify the threshold value at which USEC's projected cash flows would change direction (i.e., the point at which a negative scenario would become positive, or vice versa). The results of this second sensitivity analysis are summarized below:

Scenario 1: Continued Operation of Both GDPs

To illustrate the sensitivity of Scenario 1 to the price of SWU under a renegotiated Russian contract two additional exhibits are included in Appendix 2.1.A that show USEC's cash flow if the renegotiated price is at the market price and USEC's cash flow if the renegotiated price is at the current agreement price. These two exhibits are the fifth and sixth exhibits in Appendix 2.1.A.

Scenario 2: Continued Operation of One GDP

To illustrate the sensitivity of Scenario 2 to the price of SWU under a renegotiated Russian contract two additional exhibits are included in Appendix 2.2.A that show USEC's cash flow if the renegotiated price is at the market price and USEC's cash flow if the renegotiated price is at the current agreement price. These two exhibits are the fifth and sixth exhibits in Appendix 2.2.A.

Scenario 3: Deployment of a Centrifuge Plant and No GDPs

To illustrate the sensitivity of Scenario 3 to the price of SWU under a renegotiated Russian contract two additional exhibits are included in Appendix 2.3.B that show USEC's cash flow if the renegotiated price is at the market price and USEC's cash flow if the renegotiated price is at the current agreement price. These two exhibits are the fifth and sixth exhibits in Appendix 2.3.B.

Scenario 4: Broker Russian SWU

To illustrate the sensitivity of Scenario 4 to the price of SWU under a renegotiated Russian contract two additional exhibits are included in Appendix 2.4.A that show USEC's cash flow if the renegotiated price is at the market price and USEC's cash flow if the renegotiated price is at the current agreement price. These two exhibits are the fifth and sixth exhibits in Appendix 2.4.A.

Scenario 5: Cessation of All Operations

As Scenario 5 is specified, USEC cannot maintain positive cash flow (by definition).

Scenario 6: Acquisition of USEC by Another Party

Under Scenario 6, acquisition by another party becomes infeasible if USEC's market value exceeds the break-up value. Market value is calculated as price per share (currently about \$4.25) times the number of shares outstanding, both of which are subject to change.

5.3 Conclusions and Recommendations

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Appendix 1: Results by Scenario

- 1.1 Scenario 1: Continued operation of the two GDPs
- 1.2 Scenario 2: Continued operation of only one GDP
- 1.3 Scenario 3: Continued operation assuming the commercial deployment of advanced enrichment technology
- 1.4 Scenario 4: Operation of the business as a broker of SWU
- 1.5 Scenario 5: Cessation of all operations
- 1.6 Scenario 6: Acquisition of USEC to sell its assets

Appendix 1.2: Results by Scenario

Scenario 2: Continued operation of only one GDP

Appendix 1.3: Results by Scenario

Scenario 3: Continued operation assuming the commercial
deployment of advanced enrichment technology

Appendix 1.4: Results by Scenario

Scenario 4: Operation of the business as a broker of SWU

Appendix 1.5: Results by Scenario
Scenario 5: Cessation of all operations

Appendix 1.6: Results by Scenario

Scenario 6: Acquisition of USEC to sell its assets

Appendix 2.1.A: Sensitivity Analysis by Subscenario

Scenario 1a: /

Appendix 2.1.B: Sensitivity Analysis by Subscenario

Scenario 1b: Two GDPs with no Russian SWU after FY 2001

Appendix 2.2.A: Sensitivity Analysis by Subscenario

Scenario 2a: One GDP with 6 million Russian SWU annually in FY 2002-2010

Appendix 2.2.B: Sensitivity Analysis by Subscenario

Scenario 2b: One GDP with 8 million Russian SWU annually in FY 2002-2009

Appendix 2.2.C: Sensitivity Analysis by Subscenario

Scenario 2c: One GDP with no Russian SWU after FY 2001

Appendix 2.3.A: Sensitivity Analysis by Subscenario

Scenario 3a: New technology beginning in FY 2006 with continued operation
of Paducah GDP

Appendix 2.3.B: Sensitivity Analysis by Subscenario

Scenario 3b: New technology beginning in FY 2006 with closure of
Paducah GDP in FY 2009

Appendix 2.3.C: Sensitivity Analysis by Subscenario

Scenario 3c: New technology beginning in FY 2004 with closure of
Paducah GDP in FY 2007

Appendix 2.3.D: Sensitivity Analysis by Subscenario

Scenario 3d: New technology beginning in FY 2006 with continued operation of Paducah GDP and no Russian SWU after FY 2001

Appendix 2.4.A: Sensitivity Analysis by Subscenario

Scenario 4a: Broker 6 million Russian SWU annually in FY 2002-2010
(after closure of both GDPs)

Appendix 2.4.B: Sensitivity Analysis by Subscenario

Scenario 4b: Broker 9.3 million Russian SWU annually in FY 2002-2009
(after closure of both GDPs)