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**SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT
ANALYSIS REPORT**

Rocky Flats Plant Site

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

 **EG&G ROCKY FLATS**
EG&G ROCKY FLATS, INC.

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1.0 INTRODUCTION, SUMMARY AND CONCLUSION

1.1 BACKGROUND

In April 1980, the U.S. Department of Energy (DOE) released the Final Environmental Impact Statement for the Rocky Flats Plant Site, Golden, Jefferson County, Colorado (U.S. DOE, 1980, referred to herein as FEIS). The proposed action was the continued operation of the Rocky Flats Plant (RFP) site. Much of the information that is contained in the FEIS had been compiled prior to publication of the Draft EIS in September 1977. There have been many changes at the RFP since preparation and release of the FEIS: the number of employees has increased, additional process and support buildings have been constructed and equipped; additional buildings are proposed; new programs and activities have been implemented in response to recent hazardous waste requirements; new information is available on land use, local traffic, wetlands, etc., and there is an increasing public awareness and public demand for information on operation of and impacts from the RFP.

Pursuant to Council on Environmental Quality (CEQ) regulations implementing the National Environmental Quality Act (NEPA), specifically 40 CFR 1502.9, "(c) Agencies:

1. Shall prepare supplements to either draft or final environmental impact statements if:
 - i. The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
 - ii. There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed actions or its impacts.
2. May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so."

Pursuant to DOE NEPA Guidelines (52 Federal Register 47662, Section C2), where it is unclear whether a supplement is required, "DOE will prepare an analysis which provides sufficient information to support a DOE determination with respect to the criteria of 40 CFR 1502.9(c)(i) and (ii)."

1.2 PURPOSE

The purpose of this Supplemental EIS (SEIS) Analysis Report is to analyze changes in the proposed action that are relevant to environmental concerns in order to determine if the changes are substantial, and

to analyze new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts in order to determine if the new circumstances or information are significant.

1.3 SUMMARY AND CONCLUSION

Based on the analysis contained herein, there have been substantial changes in the RFP proposed action that are relevant to environmental concerns. Also, there are significant new circumstances and information relevant to environmental concerns and bearing on the proposed action and its impacts. Therefore, it is the opinion of the authors that the preparation of a Supplement to the Rocky Flats Plant Site Environmental Impact Statement is required in compliance with 40 CFR 1502.9(c). Following is a brief summary of substantial changes and significant new circumstances and information to support this opinion.

1.3.1 Substantial Changes in the Proposed Action

When the RFP FEIS was prepared, there were more than 1.7 million square feet of building floor space contained in over 100 structures at RFP. Currently, there is over 2.7 million square feet of floor space in approximately 140 structures. Over 1 million additional square feet is proposed to be constructed (refer to Section 3.1).

Numerous facilities have been added to the RFP site, and additional facilities are proposed. Whereas the major facilities have been or are being described and their impacts have been or are being analyzed in facility-specific NEPA compliance documents, the cumulative environmental impacts have not been determined (refer to Sections 3.2 to 3.12).

There have been substantial changes in the waste management program at the RFP. Many of these changes result from Resource Conservation and Recovery Act (RCRA) compliance requirements and the Environmental Restoration Program to clean up contaminated areas on the RFP site and in the surrounding buffer zone (refer to Section 4.3).

1.3.2 Significant New Circumstances and Information

Since preparation of the RFP FEIS, there has not been a significant change in the projected population of the surrounding area. However, there have been significant changes in local government land use plans, and in the planned urbanization of the immediate area surrounding the RFP site (refer to Section 2.2).

There has been a significant increase in the volume of vehicular traffic in the area surrounding RFP. In a large part, this increase is thought to be due to the increase in employment at the RFP (refer to Section 2.2). In addition, there are significant new circumstances and information regarding transportation and transportation impacts (refer to Section 2.6).

Significant new information specific to the RFP site is now available on the subjects of cultural resources, threatened and endangered species, prime farmland, wetlands, vegetation, seismology, and economics (refer to Sections 2.3 to 2.9).

There are significant new circumstances and information regarding the use, and release of toxic and hazardous chemicals, and the disposal of hazardous wastes at the RFP. In addition, there is a need to conduct a comprehensive hazardous chemical risk assessment and impact analysis for the RFP site (refer to Section 2.8).

1.4 STUDY APPROACH

1.4.1 Definitions

The analysis contained in this report is based on an evaluation of whether conditions at the RFP have changed sufficiently since the 1980 FEIS to warrant the preparation of an SEIS. An initial step in this evaluation is the development of criteria by which to judge the significance of these changes. DOE NEPA Compliance guidelines require that a Supplemental Environmental Impact Statement be prepared if:

- "• substantial changes are made in the proposed action that are relevant to environmental concerns; or

- there are significant new circumstances or information affecting the proposed action or its impacts that are relevant to environmental concerns..."

These criteria are based on the CEQ regulations, as discussed more fully in Section 5.0 of this analysis report. For the purposes of this analysis, the following working definitions of the two key words "substantial" and "significant" have been used.

Substantial Change refers to notable actions related to RFP which have taken place in the past or which are expected to occur in the future, and which were not anticipated or discussed in the FEIS. These actions are either totally new in character compared to the actions discussed in the FEIS, or they are much more (or much less) significant to environmental concerns than was anticipated in the FEIS.

Significant new circumstances or information is defined in accord with CEQ regulations (40 CFR 1508.27) in terms of both context and intensity as follows:

- A. Context means that the circumstances or information must be viewed in terms of the setting. The question should be asked does the new information affect the RFP setting in a manner that will change the environmental impacts associated with the RFP? As an example, is potential new information regarding climatological changes from global warming relevant to RFP environmental concerns? For this analysis, the answer is probably not, unless these changes imply a new basis for the definition of storms affecting the plant which would change the assumed impact or risk of a natural weather-related catastrophe. Similarly, new information regarding the future of the nuclear weapons program in view of lessened east-west tensions is probably not relevant to RFP unless this information implies substantial changes to the operation of the RFP and to its environmental impacts. On the other hand, the context of public awareness of environmental and safety issues relating to the nuclear weapons program appears to have intensified since the mid- to late-seventies when the EIS was prepared.
- B. Intensity refers to the severity of the impacts in the CEQ regulations. For the purposes of the SEIS analysis, the assumption is that the new circumstances or information which has surfaced since the FEIS would trigger a requirement for an SEIS if the information or circumstances would cause impacts whose intensity or severity are as defined in the CEQ regulations. The following is excerpted from the regulations with regard to intensity (40 CFR 1508.27). Comments have been added to indicate the relevance of each section to the determination of the significance of the "new information or circumstances" to the RFP SEIS Analysis.

"1. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal Agency believes that on balance the effect will be beneficial."

Comment: In this case, new information may lead to beneficial or adverse impacts. If either of these is significant according to the CEQ regulations, then the information is significant.

"2. The degree to which the proposed action affects the public health or safety."

Comment: Changes in circumstances, such as major differences in standards to protect health and safety would be considered significant under this section.

"3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas."

Comment: Although it is unlikely that these special categories of land use have changed since the FEIS, any redesignation of geographic resources in the region of influence of the RFP may be considered significant. Other land use changes have occurred since

- the FEIS, as discussed in a later section of this analysis, and those changes have been significant.
- "4. The degree to which the effects on the quality of the human environment are likely to be highly controversial."
- Comment: Controversy surrounds many actions at the RFP, especially those which the public perceives as affecting safety and the environment. Any actions since the FEIS which have engendered controversy with the public should be considered significant.
- "5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks."
- Comment: Changes in risk assessment techniques, standards and criteria probably constitute significant new information or circumstances.
- "6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration."
- Comment: The primary action being considered at RFP is the continuation of operation of the plant, with an understanding that the operations may change even if the primary mission does not. Information on specific individual actions at the RFP is significant under this heading if these individual actions set a precedent or presume future actions.
- "7. Whether the action is related to other actions with individually insignificant but cumulative significant impacts. Significance exists if it is reasonable to expect a cumulatively significant impact on the environment."
- Comment: Information or circumstances affecting the overall cumulative impact of the RFP are significant.
- "8. The degree to which the action may adversely affect [items] listed ... in the National Register of Historic Places..."
- Comments: Same comment as under number (3), above.
- "9. The degree to which the action may adversely affect an endangered or threatened species ..."
- Comments: Same comment as under number (3), above.
- "10. Whether the action threatens a violation of a ... law ..."
- Comments: Newer laws or regulations, such as the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA), may not have been adequately addressed in the FEIS. New circumstances regarding the legal or regulatory environment within which the RFP operates are considered significant.

In summary, the analysis described in this report sought to determine if the changes that have occurred since 1980 at the RFP and its region of influence have been substantial, or if the new information or circumstances have been significant. In both cases, the evaluation of new conditions was of their potential for

causing major changes to the environmental impacts of the RFP as discussed in the FEIS, not just for the magnitude or importance of the changes themselves.

1.4.2 Alternatives

New alternatives to the proposed action of a continuation of operations at the RFP are continually being developed and discussed within DOE. The FEIS evaluated the impacts of some of these alternatives in a more or less generic sense. The FEIS considered five alternatives:

1. No change in current activities;
2. Completion of changes currently under way;
3. Relocation of operations to another facility;
4. Termination of operations; and,
5. Other alternatives (primarily individual actions at the current plant site which were considered but not funded at the time of the FEIS).

These alternatives remain current today. For example, the "2010 Report to Congress" (Report to Congress, 1988) which discusses modernization of the U.S. Nuclear Weapons Complex, recommends the implementation of alternative (3), above. Reasons given include the increasing encroachment of population surrounding the RFP, and public concerns about safety. The "2010 Report" also discusses the need for environmental restoration at Rocky Flats and other facilities of the Nuclear Weapons Complex. The report was submitted by the President to Congress in December of 1988. In the interim, a number of announcements have been made by DOE regarding its intentions to continue operations at RFP, and it is uncertain whether the "2010 Report" is still a viable, approved policy outline for DOE.

These issues are likely to be resolved in the forthcoming programmatic EISs which have been announced recently by DOE. These programmatic EISs will assist the DOE in making short and long term decisions regarding the entire Nuclear Weapons Complex, including all 17 facilities of the Complex. RFP's future mission is expected to be better defined as a result of these decisions. Since there is some uncertainty regarding the final policy decision on the part of DOE regarding the operation of RFP, it is difficult to say whether this constitutes significant new information at this time. Nor is it clear if the programmatic EISs and subsequent decisions will lead to substantial changes in the proposed action at RFP. Since substantial

changes to the proposed action may result from the programmatic EISs and subsequent decisions, it may be appropriate to take one of the following actions with regard to the preparation of an SEIS for RFP:

- Prepare an SEIS, if it is warranted on the basis of currently known substantial changes in the proposed action and/or significant new circumstances or information affecting environmental impacts due to RFP. This approach acknowledges the possibility of an additional SEIS being required soon after the current SEIS was completed if the proposed action is substantially changed after programmatic review.
- Wait for preparation of the SEIS until the programmatic EISs are completed and subsequent decisions have been made by DOE.
- Integrate the RFP SEIS process with the programmatic EISs.

These last two approaches are dependent on the timing and schedule of the programmatic environmental analyses. On balance, given that the programmatic EISs will begin soon, it appears to be more prudent for DOE to consider one of these last two approaches rather than be faced with a potentially obsolete SEIS in the near future.

Another approach which could be taken by DOE is to develop and implement an Environmental Impact Assessment Process (EIAP), which would be a continuous program of documentation to satisfy the requirements of NEPA, CERCLA, RCRA and other state and federal environmental laws. The EIAP would use state-of-the-art techniques of data base management, communication, public involvement, cumulative impact analysis, and document updating to maintain the NEPA documents for RFP in a continuously up-to-date form. The EIAP would do away with the need for the periodic development of expensive, static, stand-alone documents such as individual action EISs and site-wide SEISs, while providing a maximum of current, consistent information on the environmental effects of RFP actions to the decision makers and the public.

2.0 RFP FEIS BASELINE CHANGES

2.1 PLANT MISSION

The basic mission for the Rocky Flats Plant has not substantially changed since the 1980 RFP FEIS was prepared. The primary function of the RFP continues to be the fabrication of nuclear weapons components with state-of-the-art technologies using both radioactive and nonradioactive materials.

A current informational brochure (Rockwell International, undated) states, "At the plant, the product is called a "pit". A pit contains fissile plutonium fuel for a nuclear weapon." The "pit" is not specifically discussed in the 1980 FEIS, however, the production of pits is not a substantial change in the plant mission or activities as described in the 1980 FEIS.

Activities and facilities involving recovery of strategic materials, waste management, health and safety, environmental management, security and other programs support the primary mission. Many of the programs such as hazardous waste management have significantly changed since preparation of the 1980 FEIS. Some of these changes are the result of changes to statutory and regulatory compliance requirements. Other changes result from the continuing modernization as a result of new products and information, and from plans and policies to improve safety and decrease exposure to radiation and hazardous chemicals.

2.2 DEMOGRAPHICS

2.2.1. Population

The 1980 RFP FEIS estimated that approximately 1.8 million people lived within 50 miles of the Rocky Flats Plant site in 1977, and this population was forecast to increase to approximately 3.5 million people by the year 2000 (DOE, 1980). The Rocky Flats Plant Site Environmental Report for 1988 estimated that there were approximately 2 million people living within a 50-mile radius of the plant site (Rockwell International, 1989a).

In 1977, the Denver metropolitan area contained 1.5 million people, and the 1980 FEIS predicted that the area would contain 2.4 million people by the year 2000. In 1989, the Denver Regional Council of Governments (DRCOG) estimated the six-county Denver metropolitan area (Adams, Arapahoe, Boulder, Denver, Douglas, and Jefferson Counties) to contain 1,886,300 people and the eight county area (also including Clear Creek and Gilpin Counties) to contain 1,897,675 people. As shown in Table 2-1, DRCOG has forecast the six county Denver metropolitan area to increase to 2,340,800 people by the year 2000 (DRCOG, 1989; DRCOG, 1988).

Between 1980 and 1985, the eight-county Denver metropolitan area population increased at an annual growth rate of 2.4 percent. Between 1985 and 1989 there was an annual growth rate of approximately 1.0 percent, which was the national average. The estimated population change between January 1, 1988 and January 1, 1989 had decreased to a 0.1 percent growth rate for both the six-county and the eight-county regions (DRCOG, 1989).

Population in the area surrounding the Rocky Flats Plant is continuing to grow. However, the rate of growth has decreased during the past few years. Population estimates for the Denver metropolitan area for the year 2000 as contained in the RFP FEIS and as more recently predicted by DRCOG are very similar. The present and predicted future populations are not significantly different than those predicted in the 1980 FEIS, and do not by themselves constitute significant new circumstances or information that would require the preparation of an SEIS.

2.2.2 Land Use

2.2.2.1 Local Government Land Use Plans

The Rocky Flats Plant and the surrounding buffer zone are located in Jefferson County. Much of the northern boundary of the buffer zone borders Boulder County. The Jefferson County Planning Department has recently prepared a land use inventory for northeast Jefferson County which includes the RFP and the surrounding area. The closest existing residential development is located approximately 1 1/2 miles east of

TABLE 2-1
POPULATION FORECAST DISTRIBUTIONS

	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>
Adams	244,839	257,880	289,000	371,800	433,100
Arapahoe	293,621	370,500	425,500	508,600	579,500
Boulder	189,625	215,775	236,000	267,900	302,000
Denver	491,119	513,070	516,800	549,900	573,100
Douglas	25,153	39,750	60,200	125,500	195,700
Jefferson	374,107	418,075	458,700	517,100	546,500
Region	1,618,464	1,815,050	1,986,200	2,340,800	2,629,900

Source: DRCOG, 1988

the RFP buffer zone. One of the land parcels bordering the buffer zone on the east side is zoned for single family detached residential development. The town of Superior located in Boulder County has extended its city limits south to include property in Jefferson County that borders the RFP buffer zone in the northeast corner. The town of Superior has no current plans to develop this property (Jefferson County, 1989).

The City of Arvada has adopted a Jefferson Center Comprehensive Development Plan to annex, zone, and develop approximately 18,000 acres bordering the buffer zone on the south and west. The area adjacent to the buffer zone is planned for commercial, industrial, and office use. To date, the City of Arvada has annexed 4,400 acres of the planned development. In addition, the city has designated the RFP buffer zone as a planned growth area, considering the distant future closure and decontamination of the RFP site (City of Arvada, 1989).

The City of Broomfield purchased and annexed approximately 670 acres located approximately 1/2 mile east of the RFP buffer zone. The area contains the Great Western Reservoir which is used for municipal water storage, and contains undeveloped land which is designated as open space (personal communication with Arne Carlson, Broomfield Planning Department, February 5, 1990).

As part of its open space program, the City of Westminster has purchased and annexed approximately 425 acres located approximately 1 mile east of the buffer zone. The western portion of the property may be sold for industrial, office and commercial development at the time Highway W-470 is developed. The eastern portion of the property is planned to be retained as permanent open space (personal communication with Brent Neilson, Planning Director, City of Westminster, January 25 and February 15, 1990).

Boulder County has also prepared comprehensive land use plans and zoning maps since the 1980 RFP FEIS was published. The majority of the local Boulder County land located north of the RFP buffer zone is zoned for agricultural use. The developed town of Superior is located approximately 2 miles north of the northeast corner of the RFP buffer zone. However, as previously discussed, the Superior city limit has been extended south into Jefferson County and it borders the buffer zone in the northeast corner. The developed City of Broomfield is located approximately 3 1/2 miles east of the buffer zone, however, the Broomfield city

limits have been extended to within about 1 mile of the northeast corner of the buffer zone (Boulder County, 1985; Boulder County, 1989).

Since preparation of the RFP FEIS, there have been significant changes in the local government land use plans, and in the planned urbanization of the immediate area surrounding the Rocky Flats Plant. These significant changes support the need to prepare an SEIS.

2.2.2.2 Agriculture

As reported in the 1980 RFP FEIS, in 1976, Jefferson County had approximately 14,200 acres of crops planted out of a total of 475,000 acres. Boulder County had 56,200 acres of crops planted out of a total land area of 405,760 acres. These crops consisted of winter wheat, corn, barley, dry beans, sugar beets, hay and oats. In 1988, Jefferson County had approximately 8,900 acres of crops planted and Boulder County had approximately 45,200 acres of crops planted (Colorado Agricultural Statistics Service, 1988).

In 1976, livestock in the two counties included 9,500 head of cattle, 200 pigs, and 400 sheep being raised in Jefferson County, and 34,000 head of cattle, 2,300 pigs, and 6,500 sheep in Boulder County. In 1986, the last year of county livestock inventories by the Colorado Agricultural Statistics Service, there were 6,000 head of cattle, approximately 300 pigs, and 200 sheep in Jefferson County, and 18,000 head of cattle, approximately 3,400 pigs, and 5,000 sheep in Boulder County (Colorado Agricultural Statistics Service, 1986).

As stated in the 1980 RFP FEIS, the total land area for agricultural production has declined due to annexation by cities. This trend has continued in Jefferson and Boulder Counties since the preparation of the 1980 RFP FEIS. This trend is not indicative of significant new circumstances or information specific to RFP and relevant to an SEIS. It is indicative of trends of decreasing agricultural production and increasing urbanization throughout the Denver metropolitan area. Indirectly, however, the increase in employment at RFP since preparation of the RFP FEIS has created an increased demand for housing and human services and has contributed to urbanization in Jefferson and Boulder Counties.

2.2.3 Traffic

As reported in the 1980 RFP FEIS, major transportation routes near the RFP include U. S. Highway 36 (Denver - Boulder Turnpike); Colorado Highways 72, 93 and 128; Jefferson County Highway 17 (Indiana Street); and the Denver and Rio Grande Western Railroad. During 1977, U. S. Highway 36 carried a daily average of 27,700 cars. During 1988, U. S. Highway 36 between Wadsworth and Sheridan carried a daily average of 46,900 cars. In 1977 approximately 5,100 cars per day used Colorado Highway 93 which is west of the plant and is the main commuter route between the plant and Boulder and Golden. In 1988, there was a daily average of approximately 9,400 cars on Colorado Highway 93 directly west of the Plant between Colorado Highways 72 and 128. The junction of Colorado Highway 72 and Jefferson County Highway 17 southeast of the plant had an average daily use of approximately 3,800 cars in 1977. The traffic at this intersection had increased to a daily average of 10,100 cars in 1988 (personal communication with Bob Penney, Colorado Department of Highways, January 25, 1990). There has been a substantial increase in the volume of traffic in the area surrounding the RFP. In a large part this is thought to be due to the increase in employment at the RFP.

Preliminary plans have been prepared for the W-470 Freeway to traverse the area east and south of the RFP buffer zone. However, voters have recently vetoed a \$10.00 per vehicle registration fee for W-470. It is presently thought that W-470 will be needed in the post-2000 time period, and the Denver Regional Council of Governments has placed it on a map of facilities needed by the year 2010 (personal communication with Jeff May, DRCOG, January 25, 1990).

As reported in the FEIS, the D & RGW Railroad which is located about 2 miles south of the Plant is the main line west of Denver. Currently D & RGW routes six freight trains and one passenger train in each direction on this line daily. In addition, Amtrak uses this line for one passenger train each direction daily.

The Jefferson County Airport is located approximately 5 miles northeast of the Plant. In 1989, the airport had 139,841 flights, and employed nearly 1,000 workers.

2.2.4 Local Mining Activity

There are currently six open pit sand, gravel and clay mines permitted by the Colorado Mined Land Reclamation Division located within or adjacent to the Rocky Flats Plant buffer zone. The permit number, name, operator and location of these mines are shown in Table 2-2. These mines have been in existence for several years as shown by the associated surface disturbance that is evident in the aerial photograph contained in Figure 2.1-1 of the 1980 RFP FEIS. Production at these mines is dependent on the local demand for sand, gravel and clay products and the associated economic conditions. These mines are operated independently of the RFP, and are not considered to constitute significant new information relevant to an SEIS.

2.3 CULTURAL RESOURCES

In late July and early August 1988, a Class III pedestrian cultural resource survey was conducted on a 25 percent sample of the 6,500 acre buffer zone surrounding the RFP. The survey covered 1,730 acres during which time 18 cultural resources were recorded or re-recorded. With the exception of sites 5JF79 northwest of the Plant site and 5JF217 east of the Plant site, none of the cultural resources was recommended to be eligible to the National Register of Historic Places (NRHP). Sites 5JF79 and 5JF217 were first recorded on January 20, 1975 and May 12, 1976, respectively. Additional work will be required at sites 5JF79 and 5JF217 before determinations can be made regarding their cultural affiliation, age, and functions. Until these two sites can be further evaluated for eligibility to the NRHP, it is recommended that adverse impacts to the sites be avoided (Burney et al, 1989). The information contained in the above referenced document is significant and relevant to the proposed action and its impacts.

2.4 ECOLOGY

2.4.1 Threatened and Endangered Species

A letter dated May 17, 1989 from the Fish and Wildlife Service, U. S. Department of the Interior identified the black-footed ferret (*Mustela nigripes*) as a federally listed species that may be present at the Rocky Flats

TABLE 2-2

MINES LOCATED WITHIN OR ADJACENT TO
ROCKY FLATS PLANT BUFFER ZONE

<u>Mine Permit No.</u>	<u>Operator</u>	<u>Mine Name</u>	<u>Location</u>
M-87-113	Church Ranch	Rocky Flats Pit	Section 9, T2S, R90W
M-77-328	Colorado Brick Company	State Clay Mine	Section 16, T2S, R90W
M-86-022	Cooley Gravel Company	Old Woman Mine	Section 16, T2S, R90W
M-79-45	Lakewood Brick and Tile Company	Church Pit	Section 9, T2S, R90W
M-88-068	Wesley D. Conda, Inc.	Spicer Clay Mine	Section 4, T2S, R90W
M-88-108	Western Aggregates Inc.	Front Range Aggregate Project	Sections 4 and 5, T2S, R90W

Plant site. In addition, the letter listed one species of reptile, five species of birds, and two species of mammals as Category 2 candidate species for official listing as threatened or endangered (U.S. Fish and Wildlife Service, 1989).

The standard that is used by the FWS to determine possible project effects to black-footed ferrets is the disturbance of currently occupied prairie dog habitat. Should any activities at RFP impact prairie dog habitat, a black-footed ferret survey may be necessary. No black-footed ferrets have been reported to inhabit the natural areas in the region of the RFP.

2.4.2 Prime Farmland

The soils in the area of the Rocky Flats Plant site have been mapped by the Soil Conservation Service, U. S. Department of Agriculture. Certain soil units in the RFP buffer zone are identified as prime farmland if irrigated with an adequate supply of water. However, none of the soil units in the buffer zone are irrigated with an adequate supply of water (USDA Soil Conservation Service, 1988).

2.4.3 Wetlands

The Rocky Flats Plant site is required to comply with the environmental regulations protecting wetlands. The RFP FEIS did not describe the wetlands at the Rocky Flats Plant site or the potential impacts to the wetlands. In November 1989, Rockwell International prepared a Draft Wetlands Assessment for the site (Rockwell International, 1989b). The purpose of the report was to identify and report on wetlands that occur on the Rocky Flats site so that compliance with NEPA and with Floodplain/Wetlands Review Requirements (10 CFR 1021 and 1022) are attained relative to operations at RFP. A variety of wetland types was found to occur on the Rocky Flats site including an open lake, ponds, intermittent streams, and hillside seeps. This report contains significant new information relevant to an SEIS.

2.4.4 Vegetation

Since preparation of the 1980 RFP FEIS, a color vegetation map of the area surrounding the RFP site has been prepared at a scale of 1 to 12,000. This map provides a permanent record of baseline data which can be used to monitor changes in both vegetation and the environment. Based on species composition, 16 mapping units were identified. These units were grouped into prairie, pasture and valley side. The mapping units and groups were segregated into 32 vegetation stands, also on the basis of species composition (Clark, et al, 1980). The vegetation mapping constitutes significant new information relevant to the environment.

2.5 SEISMOLOGY

Seismographic issues are addressed in Sections 2.3.4 and 3.2.2.10 and Appendix C of the RFP FEIS. The discussion characterizes Colorado, including the Rocky Flats Plant site, as an area of relatively low seismic activity.

Historical records in Colorado date back to 1870, with the largest known earthquake occurring on November 7, 1882, with an estimated magnitude of over 5 on the Richter Scale. The FEIS identifies 107 significant earthquakes (Richter magnitude greater than approximately 3.5 or Mercalli intensity of III or greater) as occurring within 200 miles of Rocky Flats Plant from 1870 through 1977. Slightly under 40 percent of these were located in the Commerce City area and were apparently associated with Rocky Mountain Arsenal fluid injection practices. The FEIS reports that from April 1962 through June 1972 over 1800 earthquakes were located in the vicinity of the Rocky Mountain Arsenal and that investigators have demonstrated a correlation between fluid injection practices at the arsenal and the earthquakes.

The FEIS describes the various faults in the Rocky Flats area and cites a report by Kirkham and Rogers (1978) which concludes that the Golden fault is active. The FEIS states the capability of the Golden fault will be determined and discussed in detail in the Final Safety Analysis Report (FSAR) for the Rocky Flats Plant. It further comments that there are no identified faults underlying the Rocky Flats site, with the possible exception of a projection of the Eggleston fault, which would cut through the northwest corner of the buffer

zone. The FEIS states that this possible fault projection will be studied and the results discussed in detail in the plant FSAR.

Since publication of the FEIS, safety analysis reports have been prepared for the plutonium handling buildings, which fulfills an FEIS commitment to examine their capabilities to resist the site seismic design criteria. These analyses have retained the design basis earthquake of magnitude 6.0 as postulated in the FEIS, with a peak horizontal bedrock acceleration of 0.14 g. Identified human health impacts for selected buildings are greater than the maximum credible earthquake conditions examined in the FEIS, in which all solar evaporation and holding ponds were postulated to rupture, with the contents (not including sediments) entering Great Western Reservoir. While review of selected building FSARs indicates that radiological impacts associated with seismic events are within the bounds of the FEIS maximum credible accident, it is evident that significant new information has been developed regarding seismic induced impacts which is neither in the form of NEPA documentation nor available to the public. With substantial changes in awareness and regulation of hazardous chemicals since preparation of the FEIS, it is also apparent that attendant environmental concerns from seismic events need to be addressed.

The FEIS notes that the seismic design criteria for the Rocky Flats Plant are dominated by the earthquake series at the Rocky Mountain Arsenal. As this series of earthquakes has occurred in recent times and the FEIS seismic data is outdated by over twelve years, there is an apparent need to review new seismic information in a public document and to assess any affects on the current design criteria.

As will be discussed in greater detail in Section 5, NEPA regulations and current court interpretations place strong emphasis on the concept of cumulative impacts. The foregoing discussion suggests two areas of cumulative impacts regarding seismic events in need of further evaluation within the context of a NEPA document - on-site cumulative impacts and off-site cumulative impacts. The first is concerned with the potential plant wide impact of multiple building releases due to a single seismic event. While a draft interim Plant Safety Analysis Report has been prepared and addresses natural phenomena including earthquakes, it is a draft document not in the public domain and is outdated in regard to current seismic upgrade plans and schedules. The proposed updating of the plant SAR will provide a means to support evaluation of this issue for incorporation in a NEPA document; however, due consideration will be required regarding any analysis

differences for SARs and NEPA documents, such as the treatment of credible events. Regarding off-site cumulative impacts, it is observed that the earthquake series at the Rocky Mountain Arsenal strongly influence the seismic design criteria at the Rocky Flats Plant. The current RFP FEIS does not appear to provide any closure regarding seismic impacts at Rocky Flats and future activities at this other federal facility.

It is finally noted that the FEIS identified several geologic fault issues to be resolved in subsequent studies. The draft Geological Characterization Report (EG&G, 1990), cites the Dames and Moore 1981 geologic and seismologic investigation as dispelling any concerns about the potential extension of the Eggleston fault into the plant area. However, this same report recommends further reflection seismic testing "to determine once and for all if there are any unknown faults in the subsurface in the RFP area." The 1981 Dames and Moore study also concluded that there is "no compelling evidence for tectonic activity of the Golden fault". The study concluded that the assumption in a 1976 Colorado Geological Survey that a graven structure was formed during the Quaternary (present time to 1.6 million years ago) and had been mapped as part of the Golden fault, led to an improper determination regarding the activity of the Golden fault. However, since the formation of a graven structure is associated with tectonic activity and two studies have reached different conclusions regarding local seismic activity, there appears to be both sufficient issue and new information to warrant updating the FEIS as to the present knowledge and needs, if any, regarding seismic investigations.

2.6 TRANSPORTATION

Transportation-related issues are discussed in several sections of the FEIS. Section 2.6.10 provides a summary description of the characteristics of the radioactive and toxic materials shipped to and from Rocky Flats, associated transportation modes and shipment miles, and transportation safety requirements. Sections 2.12.3 and 2.12.4 briefly discuss safeguards and security procedures for on-site and off-site transportation of special nuclear material and classified information. Toxic and non-toxic effects of transportation are presented in Section 3.3, with the exposure model documented in Appendix F.3 of the FEIS.

2.6.1 Material Shipments

Discussions with plant personnel indicate that, on initial consideration, no substantial changes have occurred regarding transportation modes, shipment miles, and shipment origin/destination locations. Some shipment origin/destination locations have been discontinued or presently see limited traffic. Since preparation of the FEIS, a system safety assessment has been prepared for the ATMX Rail System. ATMX Rail shipments of TRU waste to the Idaho National Engineering Laboratory (INEL) have currently been suspended. The Waste Isolation Pilot Plant (WIPP) SEIS has recently been issued and addresses transportation impacts associated with TRU waste shipments to WIPP in TRUPACT - II packages (DOE, 1990c).

It is believed the above changes in transportation shipments are not significant enough in themselves to warrant a supplement to the FEIS.

2.6.2 Transportation Impacts

The FEIS is silent regarding human health impacts normally incident to transportation, which include latent effects associated with vehicle pollution and traumatic injuries and fatalities resulting from accidents. These categories of impacts are not related to the nature of the cargo being shipped and consequently are not generally a major public issue. However, they are often a significant contributor to human health impacts associated with transportation (see WIPP SEIS, DOE, 1990c) and may be relatively large when compared to the effects of the total proposed action. In order to provide a more complete picture (in context and intensity) regarding the environmental effects of transportation, the subject impacts should be included in a SEIS document and are believed to constitute significant new information which has not been conveyed to the public.

The FEIS exclusively addresses impacts resulting from material shipments occurring off-site. It does not present a discussion of on-site transportation practices and procedures nor the associated impacts to plant personnel and the general public. While the magnitude of the impacts associated with on-site shipments may be small, evaluation of the impacts would provide significant new information.

Normal operation of the transportation system associated with Rocky Flats will result in human health impacts due to the nature of the cargo being shipped. The FEIS evaluated impacts resulting from low-level radiation exposure to transportation workers, the general population, and the maximum individual. It employs the methodology and transportation parameters given in NUREG-0170 (Final Environmental Statement on the Transportation of Radioactive Material By Air and Other Modes; U. S. NRC, 1977). In general, current methodology remains relatively unchanged to assess impacts from normal transportation. It is noted that approaches to evaluate the maximum individual dose have evolved to consider additional scenarios (e.g., exposure at stops) other than the case where a hypothetical individual is exposed to every shipment. These other scenarios often result in higher maximum individual doses. Parameters used in the FEIS analysis are well documented in Table F-39 of Appendix F. Several of the parameters, such as the fraction of travel in the various population zones (rural, suburban, and urban), are generic values taken from NUREG-0170. In response to public concerns, recent environmental analyses have utilized more route-specific information. It is also noted that no stop time has been assigned to surface transportation modes. It is likely that some stop over time will be associated with these shipments. Population exposure resulting from shipment stops (e.g., fueling, food) is often a major contributor to normal transportation impacts and should be addressed. Several other parameters such as the dose rate at the surface of the transportation packages and the number of shipments per year are in need of review for their current accuracy and have a direct impact on the magnitude of the calculated health effects. Finally, it is observed that normal transportation impacts associated with hazardous chemical constituents are not addressed in the FEIS. Any impacts should be negligible, as the material will be confined by its respective packaging; however, it would be appropriate to address chemical compatibility issues with the transportation package materials of construction and seals.

The transportation accident analysis presented in the FEIS evaluates impacts associated with releases from beryllium metal shipments and radioactive material shipments. As with normal transportation impacts, the FEIS methodology closely follows that of NUREG-0170. While accident modeling has evolved and improved (e.g., RADTRAN IV), the methodology has not changed significantly enough to in itself warrant preparation of an SEIS. Modeling improvements have included evaluation of additional exposure pathways, such as ingestion; however, these typically are of less significance. More recent transportation studies (Fischer et al, 1987) indicate that the fractional occurrence of accident severity categories as analyzed in NUREG-0170 and incorporated in the FEIS are conservative and thus, not in need of updating from a NEPA perspective.

While generic (NUREG-0170) radiological release fractions were utilized in the analysis, little justification was provided for their use for the material shipments considered. This is a weakness in the current FEIS and should be corrected in any supplemental document. It is also observed that the dispersion analysis uses meteorological conditions corresponding to Pasquill Stability Class E and a wind speed of 3 m/s. These conditions tend to be conservative; however, they may not be as conservative as more recent studies which reflect the current climate of environmental issues and awareness. It is also noted that with the exception of beryllium, potential releases associated with hazardous chemicals and associated impacts are not addressed. Even for the beryllium accident scenario, insufficient data was available at the time the FEIS was prepared to fully evaluate the resulting human health impacts. New information should be developed in support of assessing any hazardous chemical impacts due to transportation accidents and will constitute a significant change from the current analysis presented in the FEIS.

From the foregoing discussion, it is evident there are several transportation issues and significant changes which suggest the need for preparation of a supplemental environmental document.

2.7 RADIOLOGICAL ASSESSMENT

2.7.1 Standards

Since publication of the FEIS the methods of assessing radiological impacts have changed in many ways. A major change has been the incorporation of the recommendations of the International Commission on Radiation Protection (ICRP) as found in the ICRP Publication 26 (ICRP26). One of their recommendations was to add doses from all sources of exposure to assess a single risk to the individual. Doses to any particular organ from both internally deposited radionuclides and from sources external to the body are to be summed. If an internal deposition of radioactive material may impact more than one organ in the body, the doses to all the organs are to be combined. To permit combining doses, weighing factors are applied to the individual organ doses and summed to estimate a quantity called the effective whole body dose. This effective whole body dose represents a risk equivalent to the risk associated with a uniform external dose to the whole body. This is not equivalent to the dose reported in the FEIS as total body dose. The total body dose as used in the

FEIS is the dose to the body from radionuclides distributed throughout the body. It does not include the effects on the individual organs as does the effective whole body dose.

The ICRP also defined a quantity called the committed effective whole body dose that estimates the risks associated with radionuclides that remain in the body for more than one year. The Rocky Flats Plant Site Environmental Reports have used both effective whole body dose and committed effective whole body dose for some time.

Another area of major change has been in the dose conversion factors. The dose conversion factor, or DCF, converts the amount of radioactive material taken into the body to a dose to individual organs or to a committed effective whole body dose. The FEIS, in Section 3.1.2.3 of Volume I and Appendix F, references the DACRIN computer code to estimate DCF values. This computer code was based on the ICRP lung model of 1966 and ICRP Publications 2, 6 and 19. Both the U.S. Environmental Protection Agency (U. S. EPA, 1988) and the DOE (U. S. DOE, 1988a and U. S. DOE, 1988b) have published lists of DCF values based on more recent ICRP documents and models. These more recent DCF values are based on ICRP Publications 26 and 30 (which replace 2, 6, and the lung model of 1966) and Publication 48 (which replaces 19).

The new DCF values are significantly different for many isotopes considered in the FEIS. For example, the average of the new values of DCF for liver doses is 175 percent higher than those listed in the FEIS. The newer DCSs are 216 percent higher for lung doses and 390 percent higher for bone doses. Even without changing any other factors in the exposure estimate, the new values for the DCF would lead to significantly greater dose assessments.

The DACRIN code accumulated doses over a seventy year period. Currently the DOE, EPA, and ICRP all specify a fifty year dose accumulation period. The effect of reducing the dose accumulation time by twenty years would be to reduce the estimated total doses by approximately twenty-five to thirty percent.

Section 3.1.2.4 of the FEIS assessed the risk from radiation exposures using the BEIR report of the National Research Council, (NAS, 1972). The estimate of risk to the public was ninety to four hundred fifty excess cancers per million people per rem. The National Academy of Sciences has twice revised their estimate

of risks associated with exposure to radiation in the documents known as BEIR III (NRC, 1980), and BEIR V (NRC, 1990). The changes from BEIR III would not have been substantial when compared to the original BEIR report. BEIR III raised the lower end of the range of estimated excess cancers to one hundred sixty per million persons per rem. It did not raise the upper end of the range. The changes in the most current report, BEIR V, are more considerable. To quote from page six of that report (NRC, 1990):

"The cancer risk estimates derived with the preferred models used in this report are about 3 times larger for solid cancers (relative risk projection) and about 4 times larger for leukemia than the risk estimates presented in the BEIR III report. These differences result from a number of factors, including new risk model, revised A-bomb dosimetry, and more extended follow-up of A-bomb survivors."

2.7.2 Accident Analysis

Section 3.2.2 of the FEIS is the analysis of accidents involving radioactive materials. There have been changes to the facility such as additional buildings and modified operations or facilities in existing buildings. The specific impacts that such changes have on potential accidents or on consequences of accidents are beyond the scope of this part of the analysis. Interviews with plant personnel indicated that the effects on accidents and accident consequences would not differ significantly from events discussed in the FEIS. This section of the report addresses generic concerns.

In the section considering accidents, the FEIS references additional accident analysis to be done as part of Safety Analysis Reports (SARs) for individual buildings or facilities. As this work has progressed, the methodology for accident analyses has evolved and improved. Interviews with plant personnel suggested that the risks associated with maximum credible accident considered in some SARs were not necessarily bounded by the most severe accident considered in the FEIS. The changes in standards discussed in previous paragraphs would affect these risk estimates. The following paragraphs will discuss other possible reasons, specific to accident analysis, that also would contribute to increases in estimated risks.

Probabilistic Risk Assessment (PRA) and Event Tree Analysis (ETA) techniques have been applied more rigorously in the SARs than in the FEIS. SARs have incorporated human error factors into the analyses, both as they may influence the initiation of an accident and as they may affect responses to accident conditions.

These analysis techniques do not necessarily imply the need to revisit the accident analysis in the FEIS but they have brought to light additional information.

One area that changes have occurred since the analysis in the FEIS is in the frequency and severity of natural phenomenon as initiating events for accidents. Although the FEIS does not specify earthquake frequency, it was found necessary to do so for the analysis in the SARs. The estimated frequencies of high winds and tornados have both changed since the FEIS. Since the FEIS, analysis guidance has defined 150 mph winds as high winds (Rockwell International, 1985). The analysis in the FEIS defined high winds to be 158 to 206 mph. Winds of this speed have a lower frequency than the 150 mph winds used in the more recent accident analysis. The tornado missile specifications in the SAR guidelines are different from those used in the FEIS.

The initiating events for accidents considered in the FEIS included operational events and natural phenomenon. In recent accident analysis initiating events have also included Insider Threat Analysis or intentional sabotage by someone with access to areas of the plant. This additional mode of initiation has created significant accidents scenarios and consequences not considered in the FEIS.

In discussions with plant personnel, it became apparent that certain materials at risk in potential accidents were not addressed in the FEIS. For example, the FEIS discusses previous accidental tritium releases in Sections 2.3.9, 2.7.2, and 2.9. Section 3.2.2.2 discusses potential accidental releases from processing material contaminated with tritium. Yet there are other source terms for the release of tritium other than contaminated material. These other sources of tritium are significantly enough that a recent Action Description Memorandum on Sealed Sources specifically documented them.

2.7.3 Other Considerations

Section 2.10 of the FEIS describes the environmental monitoring programs conducted at the Rocky Flats Plant including air, water, soil, ecological, and other related studies. The program has also included monitoring for external gamma radiation for at least seven years although the FEIS does not document it. As reported in the Rocky Flats Site Environmental Report for 1988, the program includes thermoluminescent

dosimeter (TLD) placement at forty-six locations both on and off the plant site and in surrounding communities (Rockwell International, 1989a).

2.8 HAZARDOUS CHEMICAL ASSESSMENT

The 1980 RFP FEIS contained minimal information and impact analysis on the use and disposition of toxic and hazardous chemicals on the Plant site. Since preparation of the FEIS, hazardous chemicals and their associated impacts have become a greater concern to the regulatory community, the RFP staff, and the public. As discussed in Section 4.3 of this report, state and federal statutes and regulations (RCRA and CERCLA) have been implemented to control the use and disposal of hazardous chemicals, and various programs have been established at RFP to comply with the regulatory requirements.

Applications and reports that have been prepared in compliance with RCRA, CERCLA and Title II of the Superfund Amendments and Reauthorization Act (SARA) contain significant new information relevant to environmental concerns and demonstrate the need for an SEIS. As an example, Table 2-3 contains the 1988 Toxic Chemical Inventory for the RFP that was prepared in response to SARA. As shown in Table 2-3, as a result of a Plant-wide effort, there has been a substantial decrease in the quantity of chemicals being used at the RFP and released to the environment.

The information that is available regarding the use and disposition of hazardous chemicals at the RFP site, and the newer information regarding the hazardous nature of those chemicals and their carcinogenic potential creates significant new circumstances. These circumstances are relevant to environmental concerns and bear on the proposed action and its impacts and thus, require the reparation of an SEIS. Hazardous chemical impacts to workers, the public and the environment need to be determined for both routine operations and for potential accidents. Probabilistic risk assessment and event tree analyses need to be conducted to trace the chemicals from the point of entering the site to final disposition. This includes the need for determining exposures and health effects resulting from on-site transportation accidents, potential pipeline failures, spills, tank ruptures, maximum credible accident, etc.

TABLE 2-3
1988 TOXIC CHEMICAL RELEASE INVENTORY

<u>Chemical Name</u>	<u>Use</u>	<u>Maximum Weight On-Site, Pounds</u>	<u>Total Release, Pounds Per Year (a)</u>	<u>Waste Treatment</u>	<u>Waste Minimization</u>	<u>Reduction Prior to Treatment or Disposal 1987 to 1988, Pounds</u>
Phosphoric Acid	Manufacturing aid and ancillary	100 to 999	Stack: 175	Water: Neutralization	---	---
Sodium Hydroxide	Manufacturing aid and ancillary	100,000 to 999,999	Stack: 1 to 499	Water: Neutralization	---	---
1,1,1-Trichloroethane	Ancillary	100,000 to 999,999	Fugitive: 1 to 499 Stack: 47,010	Water: Cement Process	Process Modification	81,653 to 47,010
Carbon Tetrachloride	Manufacturing aid and ancillary	10,000 to 99,999	Stack: 132,477	Water: Cement Process	---	---
Freon 113	Ancillary	10,000 to 99,999	Fugitive: 724 Stack: 36,320	Water: Cement Process	Process Modification	123,755 to 37,044
Nitric Acid	Chemical processing aid and ancillary	100,000 to 999,000	Fugitive: 4,277 Stack: 84,676	Water: Neutralization	---	---
Hydrogen Fluoride	Chemical processing aid	10,000 to 99,999	Fugitive: 1 to 499 Stack: 1 to 499	Water: Neutralization	---	---
Sulfuric Acid	Chemical processing aid, manufacturing aid, and ancillary	10,000 to 99,999	Fugitive: 1 to 499 Stack: 2,865	Water: Neutralization	---	---

(a) No releases to streams, water bodies, or land, or by underground injection.

Source: Rockwell, 1989

The 1980 FEIS addressed the impacts of economics in Section 3.4. The rather abbreviated discussion was separated into an analysis of the impact of the RFP employment and associated payroll on the nearby economy and a brief summary of the total direct expenditures for goods, services, and utilities of the plant. The discussion was purely descriptive, and no future projection of economic impact was essayed. In Chapter 5, Alternatives, some discussion is found of the negative regional economic impacts from discontinuance of operations in whole or in part at the current site.

A number of changes have occurred in the economic circumstances surrounding the RFP since the FEIS was developed. The primary change has been the increase in size of the work force at the plant compared to the situation in the mid-1970's. The projections made in the FEIS for future (1985) work force were a range of 2,600 to 3,400 people. The payroll reported in the FEIS, presumably for the year 1977, was approximately \$40 million. No estimate is given of future (i.e., 1985) payroll. According to a study by the Center for Public-private Sector Cooperation, University of Colorado at Denver (CU - Denver), in 1987 there were 6,022 personnel working at RFP, with an associated payroll of about \$220 million (Center for Public-private Sector Cooperation, 1988). In 1988, total employment at RFP fell to 5,714 persons, but payroll remained at \$220 million. (Center for Public-private Sector Cooperation, 1989). Recent indications are that the current operator of the RFP will increase its personnel base by approximately 600 people (personal interview).

The FEIS projected a maximum employment growth rate of approximately 2.5 percent compounded annually between 1977 and 1985. The actual growth rate between 1977 and 1987 was approximately 8 percent per year, and payroll increased by 18.5 percent per year during the same period.

With respect to procurement of goods and services, the FEIS reported that the RFP annually spent about \$3 million for goods, services, and utilities for operation of the plant as of 1978, with about 40 percent spent in Colorado. The CU-Denver report estimated expenditures of approximately \$201 million in 1987, with about 65 percent spent in Colorado. The FEIS does not forecast procurement expenditures, but these numbers represent a compounded annual growth rate of about 20 percent for all expenditures and about 25

percent for expenditures within Colorado, including utilities. These are very substantial growth rates, indicating that local and regional economic impacts of continued operation of the RFP, or of changes to the operation, would be significant. These potential impacts could be made more evident in view of the continuing recessionary climate which Colorado has endured over the last six to eight years. With the exception of total disposable income in Adams, Boulder, Denver and Jefferson Counties, the FEIS does not discuss the baseline economic conditions of the State, nor does it project these into the future.

2.10 SITE ENVIRONMENTAL CHARACTERIZATION AND MONITORING

2.10.1 Radiological Characterization and Monitoring

There have been very few changes to the monitoring of airborne effluents since the FEIS. None of the results from the ambient air monitoring as described in the FEIS have yielded unexpected results. An Action Description Memorandum submitted in October, 1988, recognized the need to install twenty-four new ambient air samplers at twenty-four new locations with the upgrade of fifty-one existing samplers.

Section 2.3.5 of the FEIS is a discussion of hydrology at the site. Section 2.3.5.3 documents the sampling of surface and well water for plutonium. Section 2.9 of the FEIS acknowledges the possibility of contaminating both surface drainage and groundwater, but reports only isolated indications of contamination.

In 1986, the plant completed two major investigations. The first was the Environmental Restoration (ER) Program Phase I installation assessment (U.S. DOE, 1986a). This report included analysis and identification of current operational activities, active and inactive waste sites, current and past waste management practices, and potential environmental pathways through which contaminants could be transported. The study identified several sites that could potentially have adverse effects on the environment. These sites were designated as solid waste management units. The second major investigation completed at the Plant in 1986 involved a hydrogeologic and hydrochemical characterization of the entire facility. The RCRA Part B Application (U.S. DOE, 1986b) reported the results of this study. This investigation resulted in the identification of four areas that are the most probable source of environmental contamination. Since then, other documents have reported groundwater contamination levels as part of environmental restoration actions (U.S. DOE, 1990a; U.S. DOE,

1989a). Because of the uncertainty of the normal (or background) levels and variability of geochemical samples, Rocky Flats Plant has initiated an ongoing program of background characterization (U.S. DOE, 1989b). These studies and reports have added significant new data about groundwater contamination levels to that documented in the FEIS.

The references cited above also contain information about soil contamination levels not included in the FEIS. The Phase II sampling plan for the 903 Pad, and East Trenches Areas recognized the need for more accurate characterization of the soils in eastern portion of the site, including the buffer zone as far east as Indiana Street (U. S. DOE, 1989a). The sampling program includes comprehensive surficial soil scrapes and vertical soil profiles to characterize the vertical and horizontal extent of soil plutonium contamination. The sampling program is significantly more extensive than the routine sampling program described in the FEIS.

In addition, a court settlement required the evaluation of certain lands adjacent to the Rocky Flats Plant for possible plutonium contamination of the soil attributable to Rocky Flats Plant operation. The new data identified lands on which plutonium concentrations exceeded the guidelines for plutonium in soil published by the Colorado Department of Health. DOE contractors directed remedial actions that reduced the contamination levels in the surface soils to below the Department of Health guidelines. Although the FEIS does not directly address contamination located outside the plant site, the data collected in these evaluations does provide information about off-site environmental impacts from plant operation.

2.10.2 Non-radiological Characterization and Monitoring

As stated in the 1980 FEIS, the Environmental Protection Agency (EPA) has established a daily beryllium discharge limit of 10 grams per day for each stationary source. The beryllium stationary-source standard continues to be 10 grams per day. The total quantity of beryllium released from RFP during 1977 was about 5 grams. As indicated in the RFP Annual Environmental Monitoring Reports for the past 5 years (1984 - 1988), the total annual discharge of beryllium has been below 0.5 grams. This value is not significantly different than the background associated with the analysis.

During 1979, start up testing and preliminary work began on monitoring ambient air for selected nonradioactive air quality parameters. Limited air quality monitoring was conducted in 1980. Therefore, the 1980 FEIS did not discuss ambient air quality monitoring for nonradioactive parameters. Pursuant to the National Ambient Air Quality Standards (NAAQS) monitoring is being conducted for particulates, ozone, sulfur dioxide, carbon monoxide, nitrogen dioxide, and lead (Rockwell International, 1989a). Final EPA respirable particulate (PM-10) standards were issued July 1, 1987. Two located PM-10 samplers began monitoring during the second quarter of 1988. In 1988, the concentrations of all monitored parameters were below the respective NAAQS (Rockwell International, 1989a). During prior years (1985, 1986 and 1987), the ambient ozone concentration exceeded the NAAQS. However, the ozone concentrations were consistent with levels measured in the general Denver metropolitan area during high pollution episodes.

The 1980 FEIS did not specifically define effluent wastewater surface discharges or discharge limitations pursuant to the National Pollutant Discharge Elimination System (NPDES) permit. The FEIS documented the NPDES permit discharge limits had been exceeded numerous times between 1974 and 1977. As reported in the Rocky Flats Plant Site Environmental Report for 1988, there were five active discharge points (Ponds A-3, A-4, B-3, B-5, and C-2) and two points that had no discharge (the reverse osmosis pilot plant and the reverse osmosis plant). In 1988, the biochemical oxygen demand limits were exceeded in February, March, April and May and the fecal coliform limit was exceeded in April (Rockwell International, 1989a).

The 1980 FEIS reported that groundwater from 35 hydrologic test holes on the Plant site was sampled at 5-month intervals and analyzed for 34 parameters. The FEIS concluded that, "Samples taken from the hydrologic test wells over the past several years do not indicate significant contamination of groundwater, even on the Rocky Flats site itself" (page 2-196). The Rocky Flats Plant Site Environmental Report for 1988 (Rockwell International, 1989a) states that by 1985, a total of 56 ground water monitoring wells had been installed at RFP. In 1985 the installation of new stainless monitoring wells was begun in order to monitor for EPA Resource Conservation and Recovery Act (RCRA) chemical parameters. Subsequently, 69 additional wells were installed in 1986 and 67 wells were installed in 1987. Additional wells were installed during 1989. The majority of these wells were installed at sites regulated under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). As also stated in the 1988 environmental report, 159 wells are being sampled quarterly. Ground water quality data indicates that volatile organic compounds (VOCs) and nitrate

contamination exists in the alluvium of each of the CERCLA high priority remedial investigation areas. The extent of the plume of contaminant migration for each contaminant is well within the plant boundary.

There is significant new non-radiological environmental characterization and monitoring information bearing on the proposed action and its impacts.

2.9 ECONOMICS

The 1980 FEIS addressed the impacts of economics in Section 3.4. The rather abbreviated discussion was separated into an analysis of the impact of the RFP employment and associated payroll on the nearby economy and a brief summary of the total direct expenditures for goods, services, and utilities of the plant. The discussion was purely descriptive, and no future projection of economic impact was essayed. In Chapter 5, Alternatives, some discussion is found of the negative regional economic impacts from discontinuance of operations in whole or in part at the current site.

A number of changes have occurred in the economic circumstances surrounding the RFP since the FEIS was developed. The primary change has been the increase in size of the work force at the plant compared to the situation in the mid-1970's. The projections made in the FEIS for future (1985) work force were a range of 2,600 to 3,400 people. The payroll reported in the FEIS, presumably for the year 1977, was approximately \$40 million. No estimate is given of future (i.e., 1985) payroll. According to a study by the Center for Public-private Sector Cooperation, University of Colorado at Denver (CU - Denver), in 1987 there were 6,022 personnel working at RFP, with an associated payroll of about \$220 million (Center for Public-private Sector Cooperation, 1988). In 1988, total employment at RFP fell to 5,714 persons, but payroll remained at \$220 million. (Center for Public-private Sector Cooperation, 1989). Recent indications are that the current operator of the RFP will increase its personnel base by approximately 600 people (personal interview).

The FEIS projected a maximum employment growth rate of approximately 2.5 percent compounded annually between 1977 and 1985. The actual growth rate between 1977 and 1987 was approximately 8 percent per year, and payroll increased by 18.5 percent per year during the same period.

With respect to procurement of goods and services, the FEIS reported that the RFP annually spent about \$33 million for goods, services, and utilities for operation of the plant as of 1978, with about 40 percent spent in Colorado. The CU-Denver report estimated expenditures of approximately \$201 million in 1987, with about 65 percent spent in Colorado. The FEIS does not forecast procurement expenditures, but these numbers represent a compounded annual growth rate of about 20 percent for all expenditures and about 25

percent for expenditures within Colorado, including utilities. These are very substantial growth rates, indicating that local and regional economic impacts of continued operation of the RFP, or of changes to the operation, would be significant. These potential impacts could be made more evident in view of the continuing recessionary climate which Colorado has endured over the last six to eight years. With the exception of total disposable income in Adams, Boulder, Denver and Jefferson Counties, the FEIS does not discuss the baseline economic conditions of the State, nor does it project these into the future.

2.10 SITE ENVIRONMENTAL CHARACTERIZATION AND MONITORING

2.10.1 Radiological Characterization and Monitoring

There have been very few changes to the monitoring of airborne effluents since the FEIS. None of the results from the ambient air monitoring as described in the FEIS have yielded unexpected results. An Action Description Memorandum submitted in October, 1988, recognized the need to install twenty-four new ambient air samplers at twenty-four new locations with the upgrade of fifty-one existing samplers.

Section 2.3.5 of the FEIS is a discussion of hydrology at the site. Section 2.3.5.3 documents the sampling of surface and well water for plutonium. Section 2.9 of the FEIS acknowledges the possibility of contaminating both surface drainage and groundwater, but reports only isolated indications of contamination.

In 1986, the plant completed two major investigations. The first was the Environmental Restoration (ER) Program Phase I installation assessment (U.S. DOE, 1986a). This report included analysis and identification of current operational activities, active and inactive waste sites, current and past waste management practices, and potential environmental pathways through which contaminants could be transported. The study identified several sites that could potentially have adverse effects on the environment. These sites were designated as solid waste management units. The second major investigation completed at the Plant in 1986 involved a hydrogeologic and hydrochemical characterization of the entire facility. The RCRA Part B Application (U.S. DOE, 1986b) reported the results of this study. This investigation resulted in the identification of four areas that are the most probable source of environmental contamination. Since then, other documents have reported groundwater contamination levels as part of environmental restoration actions (U.S. DOE, 1990a; U.S. DOE,

1989a). Because of the uncertainty of the normal (or background) levels and variability of geochemical samples, Rocky Flats Plant has initiated an ongoing program of background characterization (U.S. DOE, 1989b). These studies and reports have added significant new data about groundwater contamination levels to that documented in the FEIS.

The references cited above also contain information about soil contamination levels not included in the FEIS. The Phase II sampling plan for the 903 Pad, and East Trenches Areas recognized the need for more accurate characterization of the soils in eastern portion of the site, including the buffer zone as far east as Indiana Street (U. S. DOE, 1989a). The sampling program includes comprehensive surficial soil scrapes and vertical soil profiles to characterize the vertical and horizontal extent of soil plutonium contamination. The sampling program is significantly more extensive than the routine sampling program described in the FEIS.

In addition, a court settlement required the evaluation of certain lands adjacent to the Rocky Flats Plant for possible plutonium contamination of the soil attributable to Rocky Flats Plant operation. The new data identified lands on which plutonium concentrations exceeded the guidelines for plutonium in soil published by the Colorado Department of Health. DOE contractors directed remedial actions that reduced the contamination levels in the surface soils to below the Department of Health guidelines. Although the FEIS does not directly address contamination located outside the plant site, the data collected in these evaluations does provide information about off-site environmental impacts from plant operation.

2.10.2 Non-radiological Characterization and Monitoring

As stated in the 1980 FEIS, the Environmental Protection Agency (EPA) has established a daily beryllium discharge limit of 10 grams per day for each stationary source. The beryllium stationary-source standard continues to be 10 grams per day. The total quantity of beryllium released from RFP during 1977 was about 5 grams. As indicated in the RFP Annual Environmental Monitoring Reports for the past 5 years (1984 - 1988), the total annual discharge of beryllium has been below 0.5 grams. This value is not significantly different than the background associated with the analysis.

During 1979, start up testing and preliminary work began on monitoring ambient air for selected nonradioactive air quality parameters. Limited air quality monitoring was conducted in 1980. Therefore, the 1980 FEIS did not discuss ambient air quality monitoring for nonradioactive parameters. Pursuant to the National Ambient Air Quality Standards (NAAQS) monitoring is being conducted for particulates, ozone, sulfur dioxide, carbon monoxide, nitrogen dioxide, and lead (Rockwell International, 1989a). Final EPA respirable particulate (PM-10) standards were issued July 1, 1987. Two located PM-10 samplers began monitoring during the second quarter of 1988. In 1988, the concentrations of all monitored parameters were below the respective NAAQS (Rockwell International, 1989a). During prior years (1985, 1986 and 1987), the ambient ozone concentration exceeded the NAAQS. However, the ozone concentrations were consistent with levels measured in the general Denver metropolitan area during high pollution episodes.

The 1980 FEIS did not specifically define effluent wastewater surface discharges or discharge limitations pursuant to the National Pollutant Discharge Elimination System (NPDES) permit. The FEIS documented the NPDES permit discharge limits had been exceeded numerous times between 1974 and 1977. As reported in the Rocky Flats Plant Site Environmental Report for 1988, there were five active discharge points (Ponds A-3, A-4, B-3, B-5, and C-2) and two points that had no discharge (the reverse osmosis pilot plant and the reverse osmosis plant). In 1988, the biochemical oxygen demand limits were exceeded in February, March, April and May and the fecal coliform limit was exceeded in April (Rockwell International, 1989a).

The 1980 FEIS reported that groundwater from 35 hydrologic test holes on the Plant site was sampled at 5-month intervals and analyzed for 34 parameters. The FEIS concluded that, "Samples taken from the hydrologic test wells over the past several years do not indicate significant contamination of groundwater, even on the Rocky Flats site itself" (page 2-196). The Rocky Flats Plant Site Environmental Report for 1988 (Rockwell International, 1989a) states that by 1985, a total of 56 ground water monitoring wells had been installed at RFP. In 1985 the installation of new stainless monitoring wells was begun in order to monitor for EPA Resource Conservation and Recovery Act (RCRA) chemical parameters. Subsequently, 69 additional wells were installed in 1986 and 67 wells were installed in 1987. Additional wells were installed during 1989. The majority of these wells were installed at sites regulated under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). As also stated in the 1988 environmental report, 159 wells are being sampled quarterly. Ground water quality data indicates that volatile organic compounds (VOCs) and nitrate

contamination exists in the alluvium of each of the CERCLA high priority remedial investigation areas. The extent of the plume of contaminant migration for each contaminant is well within the plant boundary.

There is significant new non-radiological environmental characterization and monitoring information bearing on the proposed action and its impacts.

3.0 NEW AND PLANNED FACILITIES

This section of the report discusses new and proposed changes in the facilities at the Rocky Flats Plant site that could be considered to be a substantial change since preparation of the 1980 RFP FEIS, and could be relevant to the preparation of an SEIS. The construction and operation of new facilities have been subject to the ongoing NEPA process and have been analyzed in numerous facility specific NEPA compliance documents. Proposed facilities and their construction and operation are also being analyzed in facility-specific NEPA compliance documents. However, the cumulative impacts associated the construction and operation of the new and planned facilities have not been appropriately analyzed in the facility-specific documents. Potential significant cumulative impacts include the use and release of hazardous chemicals, hazardous and radioactive waste generation, impacts to the natural environment, and increased traffic.

3.1 BUILDING CONSTRUCTION

The 1980 RFP FEIS states that there was more than 1.7 million square feet of building floor space in over 100 structures. An additional 331,000 square feet of additional space was planned for the new plutonium recovery and waste treatment complex (DOE, 1980). The Rocky Flats Plant Site Environmental Report for 1988 states there is approximately 140 structures on the plant site which contain approximately 2.76 million square feet of floor space (Rockwell International, 1989a). Table 3-1 lists the building square footage that was added to or removed from the plant site for each year during the period from 1978 through 1989. Over one million square feet of floor space has been added to the plant site since the 1980 RFP FEIS data was compiled. Table 3-2 lists the square footage of floor space that is proposed to be added to the site in building additions and new construction from the period 1989 through 1995. Over one million additional square feet of floor space is proposed to be constructed at RFP. The addition of over one million square feet of floor space since completion of the 1980 FEIS and the proposed addition of over one million more square feet are substantial changes in the proposed action that are relevant to environmental concerns.

TABLE 3-1

ADDITIONAL SQUARE FOOTAGE AT RFP SINCE 1978

<u>Year</u>	<u>Additions</u>	<u>Trailers/ Modulars</u>	<u>Off-site Leases^(a)</u>	<u>Buildings</u>	<u>Total No. of Buildings</u>	<u>Total</u>
1978	-----	1,040	-----	-----	2	1,040
1979	-----	8,640	-----	11,708	8	20,348
1980	-----	520	-----	344,020	4	344,540
1981	840	840	28,536	624	4	30,840
1982	-----	2,160	36,638	22,000	5	60,798
1983	1,260	5,620	-----	17,688	16	24,568
1984	28,180	38,500	46,410	37,000	29	150,090
1985	3,200	21,600	-22,000	312,952	25	315,752
1986	-----	-8,160	-14,638	4,320	12	-18,478
1987	-----	-3,690	-28,536	46,500	10	14,274
1988	-----	11,320	76,000	12,500	13	99,820
1989	-----	14,836	-----	9,200	9	24,036
<hr/>						
Total	33,480	93,226	122,410	818,512		1,067,628

^(a) Excluding the Oxnard, California facilities.

TABLE 3-2

PROPOSED SQUARE FOOTAGE ADDITIONS AT RFP

<u>Year</u>	<u>Additions</u>	<u>New Construction^(a)</u>	<u>Total No. of Buildings</u>	<u>Total</u>
1989	34,000 ^(b)	15,000	6	49,100
1990	15,000	663,886	18	678,886
1991	-----	83,000	4	83,000
1992	12,125	18,000	4	30,125
1993	600	13,000	3	13,600
1994	19,317	188,000	6	207,317
1995	7,700	9,730	6	17,430
<hr/>				
Total	88,742	990,616		1,079,458 ^(c)

(a) Includes modular buildings.

(b) Excludes Building 771 locker room expansion.

(c) Excludes the refitting of four Buildings (742,653 square feet).

3.2 OXNARD FACILITY

In June 1984, Rockwell International, on behalf of the Department of Energy purchased the Precision Forge Company (Oxnard Facility) in Oxnard, California. This facility is primarily a forging operation with accompanying support activities. The Oxnard Facility has been a sole source for high energy rate forgings for the Rocky Flats Plant and other DOE weapons systems facilities. The purchase of this existing facility does not constitute a substantial change to the proposed action.

3.3 GROUND WAVE EMERGENCY NETWORK (GWEN)

In 1986, the U. S. Air Force proposed to install a ground wave emergency network (GWEN) communications system tower and antennae in the buffer zone area of the Rocky Flats Plant site. The USAF prepared a site specific environmental survey and a generic environmental impact statement for this project. The DOE adopted the USAF environmental documentation as fulfilling NEPA implementation orders of the DOE. The installation and operation of this facility does not constitute a substantial change to the proposed action.

3.4 ADVANCED SIZE REDUCTION FACILITY (ASRF)

The purpose of the advanced size reduction facility (ASRF) is to reduce the size of large waste items such as gloveboxes and machine tools, and to steam clean waste items. Size reduction consists of manual disassembly, remote disassembly, and cutting of large waste items to fit into waste containers. Steam cleaning is used to strip the readily removable hydrocarbons and radioactive material from the size reduction waste. ASRF operators are isolated from the contaminated wastes by remote operation in an enclosed canyon and by manual operation through gloveports, thus reducing radiation and hazardous chemical exposures, risk of external and internal contamination, and exposure to physical injuries. The ASRF was installed in existing Building 776 which has dedicated exhaust systems to filter and monitor the release of radiative materials to the environment. The ASRF was planned and briefly discussed in the 1980 FEIS and does not constitute a substantial change to the proposed action. However, operation of the ASRF contributes to the cumulative release of hazardous chemicals to the environment, and the associated cumulative impacts of those releases, which

constitutes significant new circumstances and information relevant to environmental concerns and bearing on the impacts of the proposed action.

3.5 CONSOLIDATED NON-NUCLEAR MANUFACTURING FACILITY (BUILDING 460)

This facility consists of a 230,000 square foot manufacturing building built in 1985. The building contains equipment for fabrication, assembly, nondestructive testing, inspection, and associated support functions involving stainless and vanadium steels. No radioactive or toxic metals (e.g., beryllium) are processed in the facility. However, various hazardous chemicals such as freon and nitric acid are used for cleaning. This facility is located in the 389-acre security fenced area. By itself this facility does not constitute a substantial change to plant operations. However, the facility is part of the cumulative building construction that has occurred since preparation of the 1980 RFP FEIS (refer to Section 3.1). The processes that take place in Building 460 contribute to the cumulative release of hazardous chemicals to the environment.

3.6 PLUTONIUM AREA LAUNDRY

The plutonium area laundry is a 12,800 square foot laundry facility for RFP. The facility houses the staff and equipment to wash and dry 1,600 pounds of clothing per hour; and to clean and test 800 respirators per day. The laundry also contains space for storage, shipping, and receiving. Laundry wastewater effluents are processed in Building 374. This facility as with many other new facilities is part of the building construction that has occurred at the RFP site since the 1980 FEIS was prepared (refer to Section 3.1). This facility also contributes to the cumulative wastewater treatment requirements of the Rocky Flats Plant. By itself, this facility does not constitute a substantial change to the proposed action contained in the 1980 RFP FEIS.

3.7 FLUIDIZED BED INCINERATOR (FBI)

In 1978, a fluidized bed incinerator (FBI) with a capacity to treat approximately 180 pounds of waste per hour was constructed in Building 776 at the RFP site. The FBI system consists of a two-stage incineration process for thermocatalytically oxidizing combustible solid and liquid mixed wastes to chemically more stable dry residues. Incineration is a treatment process that destroys organic chemicals in the waste and converts

the radioactive contaminants to a more chemically stable form. The prime advantages of fluidized bed incineration are the efficient mixing and combustion of wastes and the breakdown of polyvinyl chlorides, a major constituent of RFP waste, to salt and other nonhazardous compounds.

A series of FBI test runs were begun in 1978 and completed in 1981 to demonstrate the processing of both liquid and solid wastes. Subsequently, an FBI trial burn was proposed to be conducted on solid and liquid feed material whose composition was designed to simulate the characteristics of the RFP waste that would be routinely treated in the FBI. The trial burn was never conducted. Currently, there are no definite plans to conduct a trial burn or to operate the FBI to incinerate radioactive or hazardous chemical contaminated wastes at RFP.

The 1980 RFP FEIS stated that organic solvents may be burned in a fluidized bed incinerator. However, the environmental impacts from a burn were not analyzed in the FEIS.

3.8 SUPERCOMPACTOR AND REPACKAGING FACILITY AND TRU WASTE SHREDDER

A supercompactor and repackaging facility (SARF) and a TRU waste shredder (TWS) are proposed to be installed and operated in Building 776. The SARF and TWS will respectively compact and shred solid plutonium-contaminated transuranic (TRU) wastes and TRU wastes that contain hazardous chemical constituents (TRU-mixed wastes). The purpose of the SARF and TWS is to reduce the external radiation dose to workers, enhance safety, and reduce waste volume and process costs. Both the SARF and TWS will be operated in gloveboxes in order to limit radiological and hazardous chemical exposures to workers. The SARF will replace an outdated manual process of repackaging waste from drums to waste boxes. Approximately 34,000 cubic feet (average for 1987 and 1988 fiscal years) of wastes are repackaged annually by opening the waste drums, manually removing the packages of waste, and placing the packages of waste into a waste box. An overall volume reduction of 5 to 1 is expected with the SARF.

The TWS is proposed to crush declassify and reduce the size of graphite molds and to shred and reduce the size of filters. An overall waste volume reduction of 2 to 1 or better is expected by the TWS.

NEPA compliance documents are being prepared which analyze the impacts of the proposed action of installing and operating the SARF and TWS. The SARF and TWS are not expected to increase cumulative environmental impacts during routine operations. A severe accident involving the SARF, TWS, or the stored supercompacted waste forms is bounded by the 100-gram median release of plutonium described in the Maximum Credible Accident contained in the 1980 RFP FEIS. The SARF and TWS will not significantly contribute to cumulative environmental impacts, do not constitute a substantial change to the RFP proposed action, and thus do not require the preparation of an SEIS.

3.9 PLUTONIUM ANALYTICAL LABORATORY

This proposed facility consists of a new 99,700-square foot laboratory building for the qualitative and quantitative analyses of plutonium, enriched uranium, gases, etc. This proposed building would be located in the 384-acre security fenced area. NEPA compliance documents have been prepared to analyze the impacts of this proposed action. By itself, this facility does not constitute a substantial change to plant operations. However, this facility contributes to the building construction described in Section 3.1 and has the potential to increase the cumulative wastewater treatment requirements, and the cumulative release of hazardous chemicals to the environment.

3.10 PYROCHEMICAL DEVELOPMENT FACILITY

This proposed facility consists of a new 36,000-square foot building. The facility will be a two-level structure, one level being a basement. The pyrochemical equipment will include stationery and improved design tilt-pour and muffle furnaces, a calorimeter, a gamma-neutron counter, programmable controllers, and a central processor. Equipment for button leaching, button sampling, salt sparging and salt staging will also be provided. Process liquid effluent will be collected in waste holding tanks, sampled, and analyzed, and then pumped to Building 374 for waste treatment. This facility would be located in the 384-acre security fenced area. NEPA compliance documents have been prepared to analyze the impacts of this proposed action. By itself, this facility does not constitute a substantial change to plant operations. However, this facility contributes to the proposed building construction described in Section 3.1, and has the potential to increase the cumulative wastewater treatment requirements and the cumulative release of hazardous chemicals to the environment.

3.11 PLUTONIUM RECOVERY MODIFICATION PROJECT AND PLUTONIUM RECOVERY OPTION VERIFICATION EXERCISE

The Plutonium Recovery Modification Project (PRMP) is proposed to replace the existing plutonium recovery systems with new recovery systems in Building 371. PRMP will recover plutonium from current and backlog scraps and residues and return the plutonium to weapons production streams at RFP. Construction will consist of decontamination and removal of current plutonium recovery process systems in Building 371, construction of a multi-story addition to Building 371 and installation of new plutonium recovery process systems.

The project process systems will consist of integrated plutonium recovery processes having a combined capacity to produce 6800 kg per year of weapons-grade plutonium metal. The aqueous process will feed into the pyrochemical, and will have the capacity to produce 2630 kg per year and 4170 kg per year, respectively.

Pyrochemical recovery processes involve the electrolysis, oxidation, and reduction reactions of plutonium metal and oxide at high temperatures in a chloride salt bath. The pyrochemical processing systems will consist of furnaces located in glovebox enclosures with low oxygen and moisture atmosphere. The basic pyrochemical processes are molten salt extraction for americium removal, electro refining for metal purification, and direct oxide reduction for conversion of plutonium oxide to plutonium metal. Aqueous process systems will include: dissolution or leaching of plutonium into a nitrate solution; ion exchange purification; and precipitation and calcination for conversion to a pure plutonium oxide.

Both the pyrochemical and the aqueous processes will be complemented by various supporting systems. These support processes will include liquid filter systems, liquid storage tanks, vacuum systems and disposal systems, incineration system, acid fume neutralization systems, and criticality drain tanks.

One of the proposed processing areas in the PRMP is the residue process area. The residue process area would extract plutonium from incinerator ash, graphite, fire brick, sand, slag, crucibles and other solid plutonium-bearing residues. Originally, the Plutonium Recovery Option Verification Exercise (PROVE) was to be a precursor to the residue process area of PRMP in that it would incorporate all of the residue process area unit operations and the associated required process equipment. It was intended that PROVE could initially be

constructed and operated independently of PRMP until its conversion to the residue process area of PRMP could be completed.

PROVE was designed to recover 150 kg of plutonium annually from 5500 kg of incinerator ash while maintaining operator exposure to less than 1 rem per year. More recently, the need to reduce the number of drums of stored residue at RFP has become an additional justification for the project. PROVE would also provide backup plutonium recovery capability at RFP and allow flexibility in the manner in which recovery operations are carried out. PROVE will provide a test bed or pilot plant facility in which many of the operational characteristics of PRMP will be developed or verified. Currently, construction of the PROVE Project is approximately 95 percent complete.

As with other proposed facilities, the construction and operation of PRMP and PROVE are being evaluated in facility-specific NEPA compliance documents. Both PRMP and PROVE have the potential to decrease the total volume of stored scraps and residue at RFP and recover plutonium. PRMP and PROVE have the potential to increase the cumulative wastewater treatment requirements and the cumulative release of hazardous chemicals to the environment.

3.12 TRUPACT SHIPMENT FACILITIES

The proposed TRUPACT Shipment Facilities will provide enclosed areas for the packaging and loading of TRU and TRU-mixed wastes into Transuranic Pack Transporters (TRUPACT II) for off site shipment and disposal. Building 664 will be temporarily modified to contain the TRUPACT Shipment Facility requirements while a new TRUPACT Shipment Facility is being constructed. NEPA process compliance documentation is being prepared to analyze the impacts of these facilities. Other than the contribution to cumulative impacts of building construction as described in Section 3.1, construction and operating of the TRUPACT Shipment Facilities should not constitute a substantial change to plant operations.

4.0 NEW AND PLANNED ACTIVITIES

4.1 EMPLOYMENT

According to the 1980 FEIS, RFP employment averaged around 2,800 during 1977. Table 4-1 lists the total full-time Rocky Flats Plant work force for September 30 of each year for the period from 1976 to 1989. Preliminary projections estimate that there will be 6,386 employees on September 30, 1990. As can be seen, the work force doubled between 1977 and 1984. Then the work force declined to approximately 5,200 in 1988. Currently the work force is again expanding. The changes in plant employment constitute a substantial change in plant activity since the 1980 EIS was prepared.

4.2 PRODUCTION OPERATIONS

Within the RFP Production Operations group many refinements have occurred since the preparation of the FEIS but these changes have not significantly changed the plant's mission or product. These refinements are the group's response to DOE orders to reduce radiation exposure to as low as reasonably achievable (ALARA) (DOE Order 5400.XX).

The FEIS Production Operations description of plutonium, beryllium, uranium, and other metals (Sections 2.5.2 to 2.5.5) has not changed significantly. The Rocky Flats Plant continues to fabricate metals in very much the same general way as described in the FEIS. Many small changes have occurred in response to ALARA. Examples are the change to facilitate easier and quicker decontamination of gloveboxes and molds. And also, workers are protected more from exposure with the use of lead aprons, portable shields, and computerized machining equipment when handling and working with fissile materials (personal interview). The detail of these operations was not addressed in the FEIS and will not be addressed further in this analysis.

The "2010 Report to Congress" proposes termination of production operations at the Rocky Flats Plant (Report to Congress, 1988). This of course would be a significant change in the plant mission and would require the development of NEPA documentation to address the proposed action. This was addressed in some detail in Section 1.4.2 of this report.

TABLE 4-1

ANNUAL ROCKY FLATS PLANT EMPLOYMENT ON SEPTEMBER 30

<u>Year</u>	<u>Number of Employees</u>
1976	2,668
1977	2,815
1978	3,156
1979	3,153
1980	3,506
1981	4,001
1982	4,771
1983	5,199
1984	5,837
1985	5,986
1986	5,453
1987	5,287
1988	5,163
1989	5,258

In review of the information available regarding Production Operations, the small refinements made in this area would not appear to constitute significant or substantial changes which would demand the preparation of a supplement to the FEIS.

4.3 WASTE MANAGEMENT

The Rocky Flats Plant waste management program has changed since the preparation of the 1980 FEIS. The programs were discussed in Sections 2.7 Radioactive Waste Systems, 2.8 Chemical and Biocidal Waste, and 2.9 Sanitary Waste and Other Liquid Effluents of the 1980 FEIS. The current program consists of several actions. These actions make up the management of non-hazardous, non-contaminated waste (solid); both low-level and transuranic (TRU) mixed hazardous wastes; and TRU wastes. Each waste type is handled and disposed of differently in accordance with current state and federal regulations.

4.3.1 Solid Waste

Solid waste, defined in 40 CFR 260, App. I, such as office and cafeteria garbage from RFP is disposed of by two methods depending on where it was generated (40 CFR 260). Solid wastes generated from outside the perimeter security zone (PSZ) are contracted for disposal at an off-site landfill. Solid wastes generated from within the PSZ, though they may be only cafeteria garbage from Building 750 or office waste, are disposed of at the RFP landfill north of the plant. A change of off-site disposal for some of the solid waste occurred in December 1989 in an effort to reduce the waste stream going to the current landfill which is nearing its lifetime capacity (personal interview).

Solid wastes are not discussed specifically in the FEIS, although they are implied in the section on the sanitary landfill (Sec. 2.9.4). The new information available on solid waste disposal is not considered significant enough on its own to warrant the preparation of an SEIS, except as it relates to the overall improvements in waste management at RFP in response to new state and federal regulations.

4.3.2 Sanitary Waste

Sanitary waste is treated at the sewage treatment facility. Sludge is collected and layered with cement in plywood boxes to absorb any free liquids. Waste boxes are then disposed of as low-level mixed waste or a Non-TRU (NTRU) waste as stated in the FEIS. Recently these wastes were disposed of in Nevada but shipments are currently suspended due to heavy metals concentrations exceeding the receiver's waste acceptance criteria. Wastes are now stored at the plant with shipments expected to resume soon (personal interview). The 1980 FEIS is unclear as to the disposal facility or waste classification, making it difficult to identify changes. However, current information regarding sanitary waste treatment is not considered of sufficient significance to require the preparation of an SEIS.

4.3.3 Process Waste

Process waste liquids are collected and transferred to the process waste treatment facilities via underground waste lines. The waste lines currently in use replaced an old underground piping system and method of storing waste liquids in asphalt lined solar ponds prior to treatment. (Closure of these ponds is addressed in the Environmental Restoration Program.) The new system cost approximately \$10 million and contains double walled pipes providing secondary containment and upgraded catch basins with leak detection systems and alarms. Also liquid wastes awaiting treatment are now stored in two large 1.1 million-gallon storage tanks. Included in the process waste treatment facility is an evaporator that produces a dried low-level radioactive mixed waste salt (personal interview). The treatment facility was not yet in total operation when the 1980 FEIS was prepared though it did discuss plans for the evaporator.

4.3.4 TRU-Mixed Hazardous Waste

The Rocky Flats Plant has initiated activities since the 1980 FEIS to comply with new Colorado and federal hazardous waste laws. These laws include the Resource Conservation and Recovery Act of 1977 (RCRA), Hazardous and Solid Waste Amendments of 1984 (HSWA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA), and the Colorado Hazardous Waste Act (CHWA). In complying with hazardous waste laws, RFP is agreeing to maintain

and follow many standards regarding waste generation, storage, treatment, and disposal. In addition to following specific hazardous waste handling procedures in the future, RFP is committed to environmental restoration of previously contaminated areas within the facility.

The Rocky Flats facility has submitted two RCRA Part B Permit Applications to the state; one for Transuranic (TRU)-Mixed Wastes on July 1988 and another for Low-Level Mixed Waste revised in April 1989. By submitting these applications, RFP has what is known as interim status with regard to hazardous waste laws. This status will expire in 1992 or when a draft permit is issued (personal interview).

In order for RFP to become a fully permitted RCRA facility the lead regulatory agency, Colorado Department of Health (CDH), must review the permit applications and prepare either a draft permit or Notice of Intent to Deny (NOID). If a NOID is prepared, the generator, RFP, may challenge this action with additional information in a permit revision or modify the facility to comply with the NOID.

Currently, the TRU-Mixed Waste Application is awaiting action by the regulatory agencies to which it was submitted. The TRU-mixed waste storage areas currently have interim status, with a storage capacity of 1601 cubic yards. The organic solidification and aqueous treatment facilities have also received interim status (personal interview).

The Low-Level Waste application has been approved in part with regard to the waste containers but a NOID was issued for the tanks. RFP is currently addressing the NOID (personal interview).

In addition to permitting activities the plant is following other hazardous waste regulations in its daily operations including reduction of hazardous waste generation. For example RFP has reduced the amount of halogenated solvents used by approximately fifty percent. The plant has implemented treatment of solar pond sludge and evaporator salts by mixing these with water and portland cement to form "pondcrete" and "saltcrete" respectively, prior to boxing and shipment for disposal. TRU mixed hazardous waste destined for the Waste Isolation Pilot Plant (WIPP) will be transported in new TRUPACT-II shipping packages and will meet WIPP waste acceptance criteria (personal interview).

The FEIS generally does not discuss the whole issue of TRU Mixed Hazardous Waste, nor the activities undertaken since 1980 to comply with hazardous waste laws. The new circumstances regarding these activities are significant, and tend to support the need for preparation of an SEIS.

4.3.5 TRU Wastes

The waste management of Transuranic (TRU) wastes at the Rocky Flats Plant has changed since the 1980 FEIS. One change is that waste that was previously TRU waste is now classified as TRU-mixed waste and is now regulated under RCRA/CHWA. RFP currently classifies only five percent of its waste as TRU waste which is not subject to hazardous waste regulation. This is because TRU-mixed waste previously classified as TRU waste in the FEIS contains other constituents such as VOCs or heavy metals that are now regulated by RCRA. Secondly, TRU waste will be shipped in TRUPACT II shipping packages rather than the rectangular waste boxes previously used. This is in preparation of shipment of waste to the WIPP site for storage (personal interview).

4.3.6 RFP Environmental Restoration Program

Rocky Flats Environmental Restoration (ER) Program was initiated to correct past operations that have contaminated ground water and soil with radioactive and hazardous chemical constituents. The ER program has an approximate budget of \$400 million through fiscal year 1996 and has been divided into ten operable units, specific activities relating to Site-Wide Programs, Environmental Restoration Program Management, the Oxnard Facility (California), and Technology Development. The operable unit (OU) sites include:

- OU 1 - 881 Hillside
- OU 2 - 903 Pad, Mound and East Trenches
- OU 3 - RCRA Closures
 - Solar Ponds
 - Original Process Waste Lines
 - Present Landfill
 - West Spray Field
 - Other Outside Closures

Inside Building Closures

Combined Phase 2 Final Measures (OPWL and OOC)

OU 4 - Priority #1 Drainages

OU 5 - 700 Area

OU 6 - 400/800 Area

OU 7 - 100 Area

OU 8 - Low Priority Sites

OU 9 - Radioactive Sites

OU 10 - Non-discernible Units

Other items of the program are Site-Wide Activities which include activities affecting the overall site and consist of background characterization programs, groundwater monitoring programs, and community relations programs. The Environmental Restoration Program Management is composed of the program management of all RCRA/CERCLA programs contained within the Environmental Restoration Program Management Program which includes Internal Program Support, Environmental Project Management Support and Environmental Data Base Management and analysis. The Oxnard Facility is investigating a leaking underground storage tank and the final item of the program, Technology Development, includes addressing cyanide/cadmium removal, treating ground water for heavy metals, treating ground water to remove VOCs, and volume reduction during excavation (Rockwell, 1989c).

The magnitude of the Environmental Restoration Program was not anticipated in the FEIS. This major activity represents a significant new circumstance relevant to the potential impacts of the RFP, and should be reviewed in an SEIS.

4.3.7 Waste Management Activities

Activities in the RFP waste management program include disposal of solid, sanitary, and operations waste. In addition to routine plant operations, the ER program activities include drilling and sampling ground water monitoring wells; soil sampling; construction of water treatment facilities and landfill surface caps; soil excavation and disposal; and disposal of wastes generated during sampling, construction and operation.

4.3.8 Potential Impacts

Review of the waste management program indicates potential environmental impacts which require additional NEPA documentation are:

- | | | |
|--------------------------|---|--|
| AIR IMPACTS | - | Hazardous chemical, radioactive and fugitive dust. |
| TRANSPORTATION IMPACTS | - | Truck/equipment and employee traffic. |
| EMPLOYMENT IMPACTS | - | Increase in RFP staff and contractors involved with waste management projects and environmental restoration efforts. |
| WASTE GENERATION IMPACTS | - | Generation of hazardous chemical and radioactive wastes from site investigations and remediation. Wastes potentially include soils, Tyvek suits and miscellaneous sampling equipment and wastes generated from the operation of on-site treatment facilities in addition to waste generated during regular plant operations. |
| ECOLOGICAL IMPACTS | - | Potential disturbance of wetlands, wildlife habitat, etc. |
| ECONOMIC IMPACTS | - | Impact of additional revenue into the surrounding area from additional employment. |
| RISKS | - | Radiological and hazardous chemical risks associated with routine and accident operations. |

Additional information generated from the waste program is included in Remedial Investigation Reports for Operable Units 1 and 2, Annual Environmental Monitoring Reports, Part B Permit Applications, and Biennial Reports to CDH regarding hazardous waste activities.

4.3.9 Program Commitments

The Department of Energy (DOE) has agreed with other federal and state agencies to address current hazardous waste regulations and accelerate cleanup of contaminated areas. DOE signed a Federal Facilities Compliance Agreement and Compliance Order on Consent in September 1989. This agreement allows one year for DOE to achieve compliance with the land disposal restrictions promulgated by HSWA (Rockwell International, 1989a).

On September 21, 1989, RFP was included on the National Priorities List (NPL) for cleanup under CERCLA. Sites added to the NPL have been investigated and found to be a threat to the environment and are

prioritized nationally as to their cleanup. This also means cleanup at RFP is to CERCLA standards and procedures rather than corrective action standards under RCRA. CERCLA allows for considerably more input from the surrounding community with regard to restoration activities (Rockwell International, 1989a).

Currently in the public comment stage, is a Federal Facilities Agreement/Consent Order between DOE, Colorado Department of Health (CDH), and the Environmental Protection Agency (EPA) Region VIII. Often this is referred to as the Inter-Agency Agreement (IAG). The IAG establishes schedules to investigate all operable units at the RFP in an environmental restoration (ER) program (Rockwell International, 1989a).

The commitments and possible beneficial and adverse impacts of the IAG constitute significant new circumstances which would support the need to develop an SEIS.

4.3.10 Summary

In summary, the waste management practices in place at RFP include substantial changes from how waste handling was described in the FEIS. Also significant information has been developed with regard to site contamination since the preparation of the FEIS. In light of this information it is felt that a SEIS should be prepared which would include a description of the waste management activities at the RFP and their associated impacts.

4.4 ENERGY AND WATER CONSUMPTION

As shown in Table 4-2, during the 1970s, positive actions were taken to reduce the consumption of various fuels and water at RFP. Table 4-2 also shows the current (1988 and 1989 fiscal years) consumption of energy resources and water. Natural gas and water consumption are approximately the same as in the 1970s. The consumption of gasoline, diesel fuel and electricity have substantially increased. Fuel oil is used as an energy substitute for natural gas when there are local natural gas shortages due to cold weather. Therefore, fuel oil consumption varies widely from year to year. The substantial increase in the use of gasoline, diesel fuel and electricity are relevant to the environment and demonstrate the need for an SEIS.

TABLE 4-2
CONSUMPTION OF ENERGY RESOURCES AND WATER
(Fiscal Years)

<u>Resource</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1988</u>	<u>1989</u>
Natural Gas (cu ft x 10 ³)	726,302	746,456	746,285	568,389	637,224	770,946	726,152
Number 6 Fuel Oil (gal)	1,619,000	702,100	513,900	940,200	335,000	10,513	115,564
Gasoline (gal)	112,082	86,571	90,215	97,979	101,390	251,384	285,644
Diesel (gal)	38,728	36,397	35,852	21,126	19,356	77,742	79,700
Propane (gal)	58,505	10,180	7,625	12,204	40,876	12,694	19,363
Electricity (MW/hr)	112,348	102,758	105,832	104,820	104,050	182,547	183,320
Water (gal)	161,161,000	143,435,000	125,952,000	115,963,000	113,244,000	137,302,000	124,592,000

4.5 ZERO DISCHARGE EFFLUENT POLICY

Recent changes in federal and state standards for effluent discharges of water and air require dramatic changes from present Rocky Flats Plant practices for treatment and release of plant waste and air (Post, 1990). RFP has proposed to initiate a zero discharge policy for all liquid effluents and change their air effluent monitoring and reporting requirement. A proposed action of recycling pond water discharge and sanitary treatment plant water is currently being investigated with an Action Description Memorandum (ADM) in preparation (personal interview).

As stated in Section 5.2.3, Water Recycle of the FEIS, RFP in 1980 had planned to recycle all of the Plant's water. This was to be done in the Water Control and Recycle project using the reverse-osmosis process and the process waste-treatment portion of the "new" plutonium recovery and process waste-treatment facilities. Both of these facilities were under construction at the time of preparation of the FEIS; however, both facilities have not proved to function as designed and are not currently in use.

Since these actions were discussed and planned for in the FEIS, they are not substantial or significant changes to the FEIS.

4.6 SECURITY AND FIRE PROTECTION

The security and fire protection programs at the RFP have been updated as changes have occurred in security and fire protection technologies. Electronic security devices such as motion and metal detectors are being used to ensure the Plant's protection. The production and support areas of the plant are now surrounded by a 6-foot high chain link fence, topped with 2 feet of three string barbed wire. When the 1980 RFP FEIS was prepared, the Plant Protection Force was in excess of 100 personnel and the Plant had 25 Fire Department staff members. Currently, the Security Force has over 250 members and there are approximately 35 Fire Department staff. The staffing increases are consistent with the Plant-wide increase in employment as discussed in Section 4.1. There have been no significant or substantial changes in the security and fire protection systems at RFP that require the preparation of an SEIS.

4.7 SAFETY

The Rocky Flats Plant has implemented several programs to decrease risks to workers and the public. An ALARA program has been implemented to reduce radiation exposures to as low as reasonably achievable. As part of the ALARA program, efforts are being made to eliminate the use of supplied air for routine work assignments and other changes are being made to decrease potential radiation exposures to workers. Significant reductions are being made in the volume of TRU-mixed wastes that are being produced, and in the use of hazardous chemicals. During 1988, the quantity of toxic chemicals requiring treatment or disposal was reduced by over 120,000 pounds (refer to Table 2-3). Currently, there is an effort to eliminate all discharge of treated sanitary wastewater. These changes substantially reduce the risks to workers and the public and are relevant to the preparation of an SEIS.

5.0 NEPA TODAY

5.1 REGULATIONS

The basic regulations set out by the Council on Environmental Quality implementing the National Environmental Policy Act of 1969 (NEPA) (40 CFR Part 1500) were first issued on November 28, 1978 (43 FR 55990) and became effective for all federal agencies by November 30, 1979.

The CEQ regulations have not changed significantly since the Rocky Flats Plant EIS became final in 1980, with the possible exception of the softening of the requirement to do a "worst-case" analysis in situations where there is insufficient or incomplete information (40 CFR 1502.22(c), amended May 27, 1986). Although many new regulations have become relevant to the plant (especially regulations and standards emanating from implementation of RCRA, CERCLA, and amendments to the Clean Water and Clean Air Acts, as well as State of Colorado regulations and permits), the 1980 EIS appears to have satisfied the NEPA requirements in effect at this time. It is the substantial actions since the EIS, as described in Chapters III and IV, which are the subject of this analysis, and which may be subject to additional NEPA regulations. The CEQ guidelines on the need to prepare supplemental EISs (40 CFR 1502.9(c)) have not changed in the interim period since the original EIS, and are as follows:

1502.9(c) "Agencies:

1. Shall prepare supplements to either draft or final environmental impact statements if:
 - i. The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
 - ii. There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
2. May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.
3. Shall adopt procedures for introducing a supplement into its formal administrative record, if such a record exists.
4. Shall prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council."

Clarification on the regulations governing the preparation of SEISs was offered by the CEQ on March 23, 1981 (46 FR 18026) in a series of questions and answers on NEPA, as follows:

"32. Q. Under what circumstances do old EISs have to be supplemented before taking action on a proposal?

A. As a rule of thumb, if the proposal has not been implemented, or if the EIS concerns an ongoing program, EISs that are more than 5 years old should be carefully reexamined to determine if the criteria in Section 1502.9 compel preparation of an EIS supplement.

If an agency has made a substantial change in the proposed action that is relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts, a supplemental EIS must be prepared for an old EIS so that the agency has the best possible information to make any necessary substantive changes in its decisions regarding the proposal."

The CEQ solicited further comments on the NEPA implementation regulations through a notice in the Federal Register on August 14, 1981, published a document addressing these comments on July 12, 1982, and followed up with a public meeting on August 12, 1982. In July, 1983, CEQ circulated a memorandum to all Heads of Federal Agencies with a summary of this process entitled "Guidance Regarding NEPA Regulations". The memorandum was an informal summary of the comments CEQ received and did not specifically address all aspects of the regulations. The need for a supplemental EIS is addressed as part of the discussion of tiering, in which CEQ indicates that the need for supplemental EISs may be lessened by the appropriate use of tiering. According to CEQ, tiering is the process of addressing a broad, general program, policy or proposal in an initial environmental impact statement (EIS), and analyzing a related site-specific or narrower proposal in a subsequent EIS. The CEQ admitted that this concept has caused a certain amount of confusion, although about fifty percent of the responders were supportive of the tiering concept.

The DOE has issued and periodically updated guidance regarding compliance with NEPA. Part III-13 of the DOE NEPA Compliance Guide (DOE, 1988) discusses Supplemental EISs, as follows:

"III-13. SUPPLEMENTS

Supplements to draft or final EISs are prepared if

- substantial changes are made in the proposed action that are relevant to environmental concerns; or
- there are significant new circumstances or information affecting the proposed action or its impacts that are relevant to environmental concerns (40 CFR 1502.9).

Procedures

Where it is unclear whether a supplement is required, the Responsible Supervisory Official prepares an analysis with sufficient information to support a determination with respect to the above criteria (DOE NEPA Guidelines, 52 FR 47662, Section C2). If, based on the analysis, the Assistant Secretary for Environment, Safety and Health (ASEH) decides that a supplement is not needed, a brief memorandum is prepared by the ASEH that explains the basis for the determination. If a supplement is required, a draft and final EIS are prepared, approved, circulated and filed in the same fashion as a draft or final EIS (see Flow II-9 and Part III-9). However, the NEPA process for supplemental EISs does not require a notice of intent, scoping, or an implementation plan."

It is not clear if revised DOE NEPA Guidelines resulting from the most current DOE policy SEN-15-90 (DOE, 1990b) will result in an inclusion of scoping in the Supplemental EIS process, since SEN-15-90 specifies that "Scoping meetings will be required for all EISs, as will public hearings on all draft EISs." The revised DOE NEPA guidelines will be published for public comment as proposed regulations.

SEN-15-90 also specifies that "A draft agency-wide policy for development and updating of site-wide EISs" will be prepared and incorporated into the DOE NEPA guidelines with the force of regulation [emphasis added]. This policy is not available as of this writing.

In summary, the available DOE and CEQ guidance points to the need to revisit the adequacy of the 1980 RFP FEIS in view of the fact that ten years have elapsed, that the proposed action is ongoing, that new actions and circumstances have occurred, and that tiering from the old FEIS may not be appropriate any longer. SEN-15-90 further supports this, as exemplified by the statement: "If the Department is to err in its judgment as to the extent of NEPA review required of new projects, it should err on the side of full disclosure and complete assessment of environmental impacts."

5.2 PUBLIC PERCEPTION

The Rocky Flats Plant has become an increasingly controversial entity, as public concerns regarding its safe operation have become more prevalent. The media have helped to increase this growing public concern regarding the RFP with continuous coverage of real and perceived safety issues at the Plant. Events such as the raid on the plant by the Federal Bureau of Investigation to obtain evidence of alleged environmental crimes have added fuel to the controversy. The DOE itself carried out an environmental audit of its NEPA compliance at Rocky Flats in the summer of 1989, which concluded that there were a number of improper NEPA-compliance procedures in use at RFP. Another confidence-shaking occurrence was the

dismissal of the RFP operating contractor, Rockwell International, as of the end of 1989 due to concerns about safety and environmental issues. At least one local and state office seeker is running on a platform which calls for the closure of the Plant within one year. Public demonstrations calling for the closure of the Rocky Flats Plant for political or safety reasons have been frequent.

In general, the operation of the RFP has been a controversial issue for many years. Controversy is an important test to establish the significance of a proposed or continuing action according to CEQ guidelines (40 CFR 1508.27). Although the requirement for an SEIS depends partly on the existence of "significant new circumstances or information" relevant to the action rather than on the significance of the action itself some of the examples of controversy given above suggest that significant new information and circumstances exist. In preparing this analysis report, fifteen to twenty RFP employees with a variety of responsibilities regarding environmental and safety issues were interviewed in depth. Many interviewees had been at the plant for five years or more, and several were employed at RFP at the time the 1980 EIS was prepared. The overwhelming majority of the interviewees felt that substantial changes have occurred at the RFP since the 1980 FEIS. Examples of these changes most often expressed included the growth of the plant (in employees and building square-footage) and the changed regulatory environment leading to increased awareness of safety and the environment, most notably resulting from compliance with State of Colorado requirements and RCRA.

5.3 COURT PRECEDENTS

A review of recent cases which involve NEPA Compliance is instructive in that it sheds some light on how various agencies have been held to have been non-compliant with NEPA. This summary is for information only, and does not imply that the authors of this analysis report are providing legal opinions or advice. The cases reviewed are shown in Table 5-1.

Methow Valley Citizens Council v. Agriculture Dept.

U.S. Court of Appeals - Ninth Circuit

- Citizens Council argued that the Forest Service in granting a permit for a new ski area in Sandy Butte, Washington, failed to adequately prepare project alternatives, wildlife impacts, and "Worst-case" analysis in the project EIS.
- The Forest Service countered that the EIS and the record of decision adopting a "future management plan" and granting the special use permit met NEPA requirements.

Table V.1 Sample Court Reviews of NEPA Cases

Methow Valley Citizens Council v. Agriculture Department (ER-1923)	December 1, 1987
No GWEN Alliance of Lane County v. Air Force Department (ER-1487)	March 9, 1988
LaFlamme v. Federal Energy Regulatory Commission (ER-2018)	March 18, 1988
Colorado v. Defense Department (ER-1931)	May 18, 1988
Army Department v. Oregon Natural Resources Council (ER-1508)	May 1, 1989

Note: (ER-xxxx refers to Environmental Reporter citation)

- The Court disagreed with the Forest Service, finding that the EIS was inadequate because it did not discuss alternatives to a new ski area, because it failed to adequately consider impacts on sensitive wildlife, and because it did not include an adequate impact mitigation plan.

This case is currently before the U.S. Supreme Court, where the issues of requirements for worst-case analysis and the implementation of a mitigation plan are being considered.

No GWEN Alliance of Lane County v. Air Force Dept.

U.S. Court of Appeals - Ninth Circuit

- The Alliance argued an EA prepared by the Air Force did not adequately address impacts of constructing military towers in scenic areas, and that the Air Force did not assess the impact of a nuclear exchange.
- The Air Force issued a generic EA for the entire project and site specific EA's for each tower location. Some sites had FONSI's. On the issue of nuclear strategy, the Air Force argued that was national defence policy and not subject to court review.
- The court reiterated that there are no "national defense" exemptions to NEPA, but that the court would rule on questions of EA adequacy for the physical construction of the towers. The court denied an injunction against the construction of the towers.

La Flamme v. Federal Energy Regulatory Commission

U.S. Court of Appeals - Ninth Circuit

- LaFlamme protested that FERC licensed a commercial hydroelectric project without considering site-specific impacts.
- FERC held that it complied with NEPA by addressing the environmental concerns during license application period. FERC concluded that issuance of the license would not constitute a "major Federal action significantly affecting the quality of the human environment."
- The court ruled against FERC, stating that FERC's assessment of economic feasibility plus impacts on cultural, aquatic and terrestrial resources, was incomplete. Nor did FERC assess the cumulative impacts on the river in question.

Colorado v. Defense Dept.

U.S. Court of Appeals - Eighth Circuit

- The State of Colorado, et al., challenged the adequacy of the Defense Department EIS for deploying MX missiles in the State. Besides excluding the State from "Meaningful" involvement in the EIS, Colorado argued that the Department failed to adequately assess impacts on water supplies, public health and safety, and numerous other issues. Joining the suit, environmental groups argued that the Department should include a discussion of alternative defense strategies and subsequent enlargement of the defense program.
- The Department accepted that an EIS was necessary, but argued that Congress had instructed that the EIS be limited to "deployment and peacetime operations" of the system. Because of these limits the Air Force argued that it need not consider the effects of alternative missile basing in the EIS.

- The court determined that the Department should consider more extensively impacts to the physical environment, including such general concerns as public health and safety, it ruled that the policy decision related to the deployment of the MX missile system was not within its jurisdiction or preview.

Army Department v. Oregon Natural Resources Council

U.S. Supreme Court

- Oregon argued that the Army should prepare a Supplemental EIS considering allegedly new information concerning potential for harm to fish and problems with turbidity of a proposed dam project.
- The Army claimed that it had reviewed the studies that were cited as new information and that it had determined that the information was insignificant and the studies did not constitute substantial new information.
- The court agreed with the Army, stating that the Army had made a reasonable decision not to prepare a Supplemental EIS on the basis of their careful scientific analysis of the alleged new information.

These and other cases point to a trend for NEPA compliance which suggests that agencies should:

- first and foremost, follow proper procedures in the CEQ regulations and the agencies' own NEPA-compliance guidelines in obtaining, reviewing and compiling data, identifying and evaluating alternatives, performing analysis, and preparing NEPA documentation.
- apply credible and established "thresholds" to ascertain if proposed actions will cause significant impact to the environment and thus require NEPA Documentation, and what constitutes "substantial changes in actions" requiring Supplemental EISs.
- separate political and policy concerns from issues requiring NEPA compliance, but that "national defense" issues are not automatically exempt from NEPA investigation.
- address impacts from connected or cumulative activities.
- determine when it may no longer be appropriate to tier to existing NEPA or other documents, and when supplemental, new programmatic, or new action-specific EISs need to be developed.
- be aware that the courts may not always appear to be totally consistent, or at least their interpretations of words such as "substantial" or "significant" may vary. The courts seem to favor public participation, full disclosure, and especially procedural correctness in NEPA compliance cases. To complicate matters, the courts have sometimes held that the NEPA process was adequately served by agencies that reviewed non-NEPA documents, made internal decisions that those documents did not contain "significant" information, and made decisions on proposed actions without much formal NEPA documentation. It appears, however, that it may be safer for agencies to err on the side of too much rather than too little NEPA documentation.

Once again, the reader is advised that the foregoing analysis does not and is not intended to convey legal advice.

SECTION 6.0

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