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Final Environmental Impact Statement for the Construction and Operation of Claiborne Enrichment Center, Homer, Louisiana

Public Comments and NRC Response

Docket No. 70–3070

Louisiana Energy Services, L.P.

U.S. Nuclear Regulatory Commission

Office of Nuclear Material Safety and Safeguards

August 1994

Commentor No. 28: Louisiana Energy

4-27	3rd paragraph, 3rd sentence: During operation, the Hold-up Basin will not be a "water body."	*28-53*
4-30	Section 4.2.1.6: This section provides an extensive discussion on the harmful effects of HF. The amount of information given, because it is included in the context of "Air Pollution," implies each of these effects has a reasonable possibility of occurring during CEC operation. Only the effects relevant to CEC operation should be included in this section. This would not include the majority of the severe effects described. Potentially severe effects, again if reasonably possible (only due to accidents potentially occurring at the CEC), should be presented in proper context in Section 4.2.2.6, Accident Analysis. Such severe effects of HF are unrelated to normal operation of the CEC, and thus do not belong in this section.	*28-54*
4-31	Last paragraph: Insert "mechanical" ahead of "testing of centrifuges."	*28-55*
4-31 and 4-32	Last paragraph: This discusses the impact of CAB releases in terms of distance from the plant stacks. To ensure clarity, a statement "releases (of acetone and Freon) from the CAB will not pass through the plant stacks" should be added.	*28-56*
4-32	Last paragraph: As explained in the comments regarding page 4-19 above, the present crime problem and the impact of the CEC on crime both are significantly overstated. This paragraph should be substantially revised. Note also in the fourth line that construction impact, considered in this section on operations, is out of place.	*28-57*
4-44	3rd paragraph: The FES should note that these recommended changes to the environmental monitoring program have been incorporated into the CEC License Conditions.	*28-58*
4-48		*28-59*

- RESPONSES TO COMMENTS -

Commentor No. 28: Louisiana Energy (Cont'd)

Response to Comment No. 28-53

The text has been expanded to indicate that the Holding Basin is expected to contain standing water only during periods of heavy rainfall.

Response to Comment No. 28-54

The EIS is intended to evaluate the potential effects of the release of hydrogen fluoride on environmental receptors and clearly notes that no effects are expected at the low release rates projected for CEC operations.

Response to Comment No. 28-55

The text has been expanded to state that testing of centrifuges in the Centrifuge Assembly Building is mechanical in nature.

Response to Comment No. 28-56

The text has been clarified to indicate that acetone and freon do not pass through plant stacks.

Response to Comment No. 28-57

See also Response to Comment No. 28-52. The construction references have been deleted from the section.

Response to Comment No. 28-58

The text has been revised to state that LES has agreed to inform the NRC of changes in dose parameters.

Response to Comment No. 28-59

Commentor No. 28: Louisiana Energy

4-54		*28-60*
4-60	2nd paragraph, 2nd sentence: The sentence "Past experience has demonstrated that procedures are occasionally misunderstood or improperly executed resulting in an uncontrolled release of UF_6 into the process area" should be modified to read "Past experience has demonstrated that on a very infrequent basis procedures have been misunderstood or improperly executed resulting in an uncontrolled release of UF_6 into the process area."	*28-61*
4-64	UF_6 Storage Area Collision: The paragraph discussing storage area collisions should include a description of where the accident was and how it happened.	*28-62*
4-65 and 4-66	The last bullet on 4-65 discusses removal of land for Road 39 right-of-way. The last paragraph in section 4.2.3 discusses clearing of land for utility lines. The paragraphs should be modified to discuss the same issue and the issue should be related to site hydrology impacts.	*28-63*
4-67		*28-64*
4-68	Section 4.2.6.1, 2nd & 3rd paragraphs: This description implies that normal operations will likely lead to at least some soil contamination that requires disposal. Clarification should be made to indicate soil contamination would result only through abnormal /accidental operating events.	*28-65*
4-69	Section 4.2.6.2.1: As similarly noted in the previous comment (page 4-68), the likelihood of contamination is overstated without the clarifying comment that this would result only through abnormal/accidental operating events.	
4-72	2nd paragraph, 3rd sentence: This should be clarified that no radioactive waste will be disposed of at the site.	*28-66*

- RESPONSES TO COMMENTS -

Commentor No. 28: Louisiana Energy (Cont'd)

Response to Comment No. 28-60

Response to Comment No. 28-61

The text has been revised to refer to the reported frequency of events of this type, that is, on the order of two per year.

Response to Comment No. 28-62

The analysis of hypothetical storage area collisions is necessarily of a generic nature.

Response to Comment No. 28-63

The text has been revised to indicate the impact of land clearing for utility lines and Parish Road 39.

Response to Comment No. 28-64

Response to Comment No. 28-65

This statement recognizes the potential for soil contamination and is not intended to imply that significant soil contamination would occur. The text has been expanded to identify potential mechanisms and related extent of soil contamination.

Response to Comment No. 28-66

The text has been revised to state that presently no disposal of wastes, including radioactive waste, is expected to occur at the site.

Commentor No. 29: Loysen, Peter

In Environmental Impacts of Construction, what is the significance of the statements that the CEC design was influenced by several local environmental factors in order to ensure operational safety and that the CEC is designed to ensure no impact on buildings from severe weather and seismic events? (See also sub-section 2.2.2.) *29-9*

In Radiological Impacts, some of the annual dose and dose rate limits and expected releases, doses, and dose rates are given in SI units and metric units, but some in SI units only. The reference to 40 CFR Part 190 standards does not specify that they are annual limits. While it may be true that the estimated doses from normal operations are small fractions of the doses received from background radiation, it should be stated that (if true) these doses are also, and importantly, small fractions of the various ~~applicable limits.~~ *29-3* *29-10*

29-11

In Decontamination and Decommissioning, you state that positive environmental impacts include release of the facilities and land for unrestricted use, discontinuation of water and electrical power use, and reduction in vehicular traffic. This implies that there are negative environmental impacts from construction and operation of the CEC. These positive impacts are not only not balanced against the negative impacts in the DEIS, they are not discussed at all. *29-12*

FOREWARD

Contrary to the initial statement in the Foreward that the information in this report will be considered by the NRC staff in the (environmental) review of the license application by Louisiana Energy Services, L.P., the information is the consideration by the staff. *29-13*

LIST OF ACRONYMS

Many of the items in this List are not acronyms, but rather abbreviations, shorthand, and notations, some of which are in common use and need no definition or are defined in the report. Regardless, it would be more useful and instructive to replace the List of Acronyms with a Glossary of Terms, in which the most *29-14*

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- RESPONSES TO COMMENTS -

Commentor No. 29: Loysen, Peter (Cont'd)

Response to Comment No. 29-9

The introductory paragraph of EIS Section 2.3.2.2 has been revised to state that the CEC design considers site-specific factors and meets the design criteria for natural phenomena events specified by the NRC.

Response to Comment No. 29-10

EIS Sections 4.2.2 and 4.2.2.4 have characterized the 40 CFR 190 limits as annual doses. Section 4.2.2.4 has been revised to indicate that estimated doses are within the applicable limits.

Response to Comment No. 29-11

Response to Comment No. 29-12

The referenced potential positive impacts of D&D and termination of operations of the facility are relative to the continued operation of the facility. The impacts of traffic, water and power usage, and land usage are discussed in the EIS.

Commentor No. 33: Nuclear Information and Resource Service

We appreciate the substantial efforts undertaken by Urenco to avoid accidents by design as much as possible, and the efforts by the NRC to examine and analyze potential accidents. However, as Elvis Costello said, "accidents will happen," thus we offer a few comments.

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Commentor No. 33: Nuclear Information and Resource Service (Cont'd)

Commentor No. 33: Nuclear Information and Resource Service

- RESPONSES TO COMMENTS -

Commentor No. 33: Nuclear Information and Resource Service (Cont'd)

3-46) (emphasis added), but the NRC omits any definition of "near" and omits any identification of the location of the flooding it predicts will occur during hurricanes ("flooding can be expected near the site" during hurricanes). Draft EIS at 3-46. In addition, the site contains an area of wetlands which consist of soils "subject to frequent flooding." Draft EIS at 3-27. The Draft EIS also admits that flooding could occur "at the site [as] . . . A result of local intense precipitation" (Draft EIS at 4-27) (emphasis added). But because the Draft EIS is so vague on details, there is no way to tell if the flooding will occur in the area surrounding LES property; on LES property, or at the actual CEC site, and whether or not this predicted flooding is within or beyond the 100 year floodplain -- which is of significant concern since the CEC will not be flood-proofed. (Draft EIS at 2-29).

41-34

In addition to the above inadequacies, the NRC has provided inadequate flood risk related data in its Draft EIS. The NRC states that flooding from the maximum level of intense local precipitation will reach a mere 3.5 inches below the Class I structures facility yard. Draft EIS at 4-27. This maximum high is based upon historical data recorded for a mere twenty-nine (29) years, 1951-1980. Draft EIS at 3-47. The NRC's flood risk data must include the maximum high for all recorded history, including the last fourteen (14) years in order to adequately determine the true flood risk posed by precipitation.

In short, the NRC must provide the data concerning historical and existing flood risk and flood controls for the area and incorporate such into its flood risk analysis and include mitigation measures taken to prepare for the predicted flooding.

41-35

- RESPONSES TO COMMENTS -

Commentor No. 41: Sierra Club Legal Defense Fund, Inc. (Cont'd)

Response to Comment No. 41-34

The term "subject to flooding" in the text of the DEIS refers to the USDA soil classification which refers to soils that may be inundated by water, as occurs in wetlands. This does not necessarily imply that major catastrophic flooding frequently occurs.

The maximum precipitation data are based on a 36-year record ending in 1988 (LES, Environmental Report p. 2.6-1). The meteorological data were the most recent data available from the National Climatic Data Center (NCDC) which is the repository and distribution center for meteorological data collected at National Weather Service stations (LES Response to comments, p. A-41, comment No. 7, Attachment A of letter to NRC from LES, dated April 10, 1992).

Response to Comment No. 41-35

Commentor No. 41: Sierra Club Legal Defense Fund, Inc.

Mr. John W. N. Hickey
January 27, 1994 - corrected copy
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P.) The Draft EIS does not address the issue of whether the CEC will be allowed to use recycled uranium as feedstock. If the license does not forbid the use of recycled uranium, the Draft EIS must evaluate the environmental impacts of processing this type of feedstock. In particular, the EIS must assess the environmental impacts of technictium-99 in airborne and waterborne emissions from the plant, and the consequent potential for environmental contamination. The Draft EIS must also consider the environmental consequences of the increased radioactivity of recycled uranium, as well as the environmental issues raised by contamination of recycled uranium with plutonium and fission products other than technitium-99. The effect of recycled uranium on decommissioning costs should also be evaluated. *41-36*

All of these serious risks, which essentially pertain to the issue of nuclear proliferation, must be discussed in the Draft EIS. CANT's chief concerns stem from the fact that the advanced technical design of the enrichment cascades at the proposed CEC would render the facility particularly vulnerable to unauthorized production of highly enriched uranium, from which nuclear bombs could be fabricated. The advanced Urenco-design cascades are non-transparent and include complicated piping arrays and modern efficiency features that permit functional cascade rearrangement by simple manipulation of valve controls, as well as rapid evacuation of centrifuge equipment. A major concern is that several inside personnel could collude to illegally produce highly enriched uranium by means of a credible scenario which would leave insufficient clues for reliable detection. *41-37*

Highly enriched uranium illegally produced at the Claiborne Enrichment Center could be sold on the black market or directly to terrorist groups or foreign countries, for manufacture of nuclear weapons. Such an event would be a major cost to society. The Draft EIS should be revised to discuss those risks and reliable means by which risk of significant illegal production of highly enriched uranium at the Claiborne Enrichment Center could be reduced to a low level.

Q.) And finally, the Draft EIS underestimates and ignores several costs of the proposed enrichment facility, whereas it overestimates and biases given benefits. This overestimation and underestimation appears to be systematic in such a way as to bias readers in favor of the proposed enrichment plant. *41-38*

- RESPONSES TO COMMENTS -

Commentor No. 41: Sierra Club Legal Defense Fund, Inc. (Cont'd)

Response to Comment No. 41-36

CEC would not be authorized to use recycled uranium.

Response to Comment No. 41-37

Enrichment operations at the CEC would be subject to NRC material, control and accounting requirements described in 10 CFR 74.33. The NRC staff has reviewed LES's Fundamental Nuclear Material Control Plan prepared for the CEC in accordance with NRC guidance and concluded that the plan satisfies the regulatory performance and system capabilities. See SER Chapter 14. The NRC staff finding on adequacy of control of the enrichment process would be verified by inspection if the facility is licensed to operate.

Response to Comment No. 41-38

It is accurate to state that the DEIS does not quantify all consequences of the proposed action. Many costs (and benefits) are not susceptible to quantification within any rigorous framework. For example, it is not possible to quantify the various dislocations associated with rapid development in a small, rural community. The literature on the consequences of this type of development provides a wide range of opinions on consequences.

Commentor No. 54: Wigley, Dan

data as a basis for present and future risks is likely to miss a variety of possible accident scenarios, in part because more accidents are likely to have occurred since those reported in the dated documents. Moreover, the DEIS assessors ignored some catastrophic accident scenarios (and assumed they would never occur) merely on the grounds that they had "never occurred" in 32 years of enrichment-facility experience or on the grounds that there were "redundant protection controls" (DEIS, 1993, p. 4-53). Even redundant protections, however, often fall victim to human and operator error, and 60 to 90 percent of serious technological accidents (according to the US Office of Technology Assessment) typically involve human error. Also, an alleged accident rate of 0 in 32 (years) is not necessarily low but is consistent with a rate as high as 1 in 10 or 20 years, for example. Because the US government typically regulates risks larger than 1 in 1,000,000 (Shrader-Frechette, 1991, p. 71), the possible enrichment-facility accident rate of 1 in 10 or 20 appears quite high. Indeed, the possible accident rate appears not to support the DEIS disclaimers about there being no "significant threat to public health and safety" from the CEC facility (DEIS, 1993, p. xxi).

4-14

- RESPONSES TO COMMENTS -

Commentor No. 54: Wigley, Dan (Cont'd)

Response to Comment No. 54-14

54-10

5. Biased Estimates of Health and Safety Risks

In addition to underestimating accident risks, the DEIS also underestimates the health and safety impacts of the CEC facility. The DEIS notes, for example, that groundwater contamination is a possibility from the proposed plant (DEIS, 1993, p. 4-69), yet the DEIS document provides no quantitative determination either of the groundwater risk or its associated probabilities and consequences. Nevertheless, the risk is likely to be substantial. Ninety percent of the 127 US government (Department of Energy) nuclear-related facilities have contaminated groundwater that exceeds regulatory standards by a factor of up to 1,000, and virtually every state in which a nuclear-related facility exists has criticized the federal government for not stopping health and safety deficiencies resulting from failure to obtain independent site monitoring (Shrader-Frechette, 1993, p. 155). Hence current US experience with nuclear facilities suggests both that the groundwater risk at the proposed CEC could be quite high and consequently that the qualitative DEIS judgments underestimate it. Because no PRA was done and assessors ignore the probabilistic groundwater risk, they draw vague, qualitative conclusions about its low magnitude and therefore appear to underestimate another real risk of the facility.

54-15

Assessors likewise claim that "minimal" releases of radioactive waste are expected during decontamination of the facility (DEIS, 1993, p. 4-71), yet the DEIS document provides no PRA and no quantitative determination either of this risk or its associated probabilities and consequences. Indeed,

Response to Comment No. 54-15

Uranium particulates released to the atmosphere from the CEC under normal operating conditions could potentially reach groundwater through dissolution in rainwater and percolation to the water table. Uranium released to surface water in the CEC normal operating liquid effluent could also percolate downward to reach groundwater. The potential impacts of these expected releases are insignificant due to the low solubility of uranium in water and the small annual quantities of uranium released to the environment. EIS Section 4.2.2 has been revised to provide quantitative support for this conclusion.