6960

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 22 1988

DOCKETED
USNRC

'88 AUG 23 P3:51

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

Morton B. Margulies, Chairman
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Oscar H. Paris
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Emmeth A. Luebke
Administrative Judge
5500 Friendship Boulevard, Apt. 1923N
Chevy Chase, Maryland 20815

In the Matter of
ALL CHEMICAL ISOTOPE ENRICHMENT INC.
(AlChemIE Facility-1 CPDF)
Docket No. 50-603-CP/OL; ASLBP No. 88-570-01-CP/OL

and

In the Matter of
ALL CHEMICAL ISOTOPE ENRICHMENT INC.
(AlChemIE Facility-2 Oliver Springs)
Docket No. 50-604-CP; ASLBP No. 88-571-01-CP

Dear Administrative Judges:

Enclosed are copies of correspondence from Applicant to the NRC staff filed in connection with the above-captioned matters, and stated attachments, dated August 17, 1988. As noted in Applicant's letters, the attachments revise, in part, the licensing applications dated November 17, 1987. The Staff has not yet reviewed the enclosed submittals.

Sincerely,

Bernard M. Bordenick

Bernard M. Bordenick
Counsel for NRC Staff

Encl: As stated

cc w/Encl: Service List

DS07

50-603

AlChemIE, Inc.

All Chemical Isotope Enrichment, Inc.

DOCKETED
USNRC
AUG 19 1988
NMSS
MAIL SECTION
DOCKET CLERK

RECEIVED
AUG 19 1988
U.S. NUCLEAR REGULATORY COMMISSION
NMSS
Mail Section

Docket No. 50-603

August 17, 1988

U.S. Nuclear Regulatory Commission
Document Control Desk
Office Nuclear Material Safety & Safeguards
Washington, DC 20555

Attention: Mr. Hugh L. Thompson, Jr.
6A-4 NMSS Docket Material

Gentlemen:

AlChemIE, in its licensing application dated November 17, 1987 included as attachments the 10CFR50.33, General Information, and 10CFR50, 51 Non-applicability and Exemptions Requirements. These attachments have been revised and are being resubmitted as follows:

1. 10CFR50.33 - General Information
2. 10CFR50 - Nonapplicability
3. 10CFR50 - Exemption Requests
4. 10CFR50 - Supplementary Information

The above is applicable to AlChemIE Facility 1 - CPDF. Should you have any questions please contact Mr. W.A. Pfeifer at AlChemIE.

Respectfully submitted,

ALCHEMIE, INC.

John H. Smelser, Jr.
Chief Executive Officer

cc: Dr. A. Thomas Clark, Jr./NRC

Pine Ridge Office Park, Suite 202-B 702 Illinois Ave., Oak Ridge, TN 37830 (615) 482-0029

24649

REVISION
AUGUST 1988

10CFR50.33 - General Information

a) All Chemical Isotope Enrichment, Inc. (AlChemIE)

b) AlChemIE, Inc.
Pine Ridge Office Park, Suite B-202
702 South Illinois Avenue
Oak Ridge, Tennessee 37830

c) AlChemIE's business will be to enrich stable isotopes using the gas centrifuge technology developed by the U.S. Department of Energy. The isotopes will be used in medical, research and industrial applications.

d) AlChemIE, Inc. is a private corporation incorporated under the laws of the State of Tennessee. The principal location for business will be the AlChemIE Facility 1 - CPDF in Oak Ridge, Tennessee. This facility was formerly the Centrifuge Plant Demonstration Facility of the Department of Energy

Name	Address	Citizenship
Ben Mullins	P.O. Box 506 Oak Ridge, TN 37831	USA
S.A. Irving	Rt. 7 Dixon Road Lenior City, TN 37771	USA
A.A. Carey	Rt. 7 Dixon Road Lenior City, TN 37771	USA
M. Miller	Rt. 2 Box 248 Powell, TN 37849	USA

AlChemIE is not owned or dominated by any alien, foreign corporation or foreign government.

e) The class of license applied for is a Class 103 for commercial and industrial facilities as defined in 10CFR50.22. The license is sought for a period of forty (40) years.

f) As it relates to AlChemIE's financial data, please refer to our submittal to the NRC dated July 22, 1988.

As it relates to decontamination and decommissioning of the facility at the end of its useful life AlChemIE has prepared a cost assessment of the AlChemIE Facility - 1 CPDF. In addition the Department of Energy (DOE) requires assurance that adequate funding will be available for the find disposition of all classified and uranium contaminated equipment and materials received from DOE. The gas centrifuge equipment and piping includes classified material, uranium contaminated material and Resource Conservation and Recovery Act (RCRA) controlled material. After commercial operations begin, this equipment, and associated auxiliaries will become contaminated or be further contaminated by the feed compounds. The product residue, in many cases, is a toxic material and must have its disposal strictly controlled.

Decommissioning of this facility at the end of its life will require disposal of parts of the process equipment and auxiliaries in one of the following classifications:

- Classified burial grounds
- Uranium contaminated burial grounds
- Toxic material burial grounds
- Landfill for industrial refuse

All classified equipment and material must be buried in a DOE classified burial ground, and although uranium contaminated materials are acceptable at the DOE facility, toxic substances are not. All classified items contaminated with toxic material will be decontaminated before burial.

In each of the respective commercial burial grounds, unclassified uranium contaminated and toxic materials can be received but not co-mingled. Uranium contaminated materials must go to the radioactive material burial ground and toxic material must go to the toxic material burial ground. Finally, industrial landfills may not receive any classified, uranium contaminated or toxic materials. Therefore, a major portion of the decommissioning effort will involve segregating each class of material into discrete categories for final disposal while trying to keep the cost of the decommission to a minimum.

For cost estimating purposes it should be noted that when the CPDF begins operations as a stable isotope enriching plant, the introduction of RCRA controlled substances will occur in two stages. Presently the 120 machines installed in the CPDF have low levels of uranium contamination internally. When operations begin, a cascade of 40 machines will be used to process various RCRA controlled substances. Approximately one year after operations begin, another 80 machines will begin being used to process material that may leave RCRA controlled residue. Hence, the decommissioning scope, and therefore the cost, will increase with time. Centrifuge machines will also fail with time. This in turn will reduce the total decommissioning cost at plant shutdown since these failed classified and/or contaminated machine components received from DOE will be disposed of as appropriate and as required at the time of failure. Thus, estimates for decommissioning and disposal of the classified and contaminated equipment received from DOE or contaminated by AlChemIE are listed below under two headings in order to establish a range of costs. These estimates are for: (1) 120 machine plant in operation employing 40 machines to process feed material that may leave RCRA controlled residues, and (2) 120 machine plant in operation employing 80 machines to process feed material that may leave RCRA controlled residues.

Summary of Decommissioning Costs & Funding Requirements

for CPDF

	120 Machine Plant in Operation - 40 RCRA	120 Machine Plant in Operation - 80 RCRA
Total cost	$3,133,144.00	$3,354,250.00
Scrap value	245,000.00	245,000.00
Net total cost	$2,888,144.00	$3,109,250.00

To assure that the appropriate funds are available AlChemIE will set aside funds in escrow and/or through debt financing. The funds will be obtained from AlChemIE's sales. Starting in 1988 through 1993 AlChemIE expects sales to increase from 4 million to approximately 95 million.

g) Applicable tc nuclear power reactors.

h) Modification of the facility, that is, the centrifuge cascade will depend on the product being manufactured. As new product requirements are defined additional modifications will be made. Consequently modifications will be an ongoing project.

i) Applicable to electrical generating and distribution facilities

j) This application does not contain Restricted Data.

10 CFR 50 NONAPPLICABILITY

(Revision 1 to November 17, 1987 Submitted)

Pursuant to 10 CFR 50.12(a)(2)(ii) the following averments of nonapplicability to 10 CFR 50 are hereby tendered. The facility to be licensed is for the production of stable isotopes only.

Part	Explanation
50.10(e)	Not applicable - Applies to a utilization facility
50.21	Does not apply. A Class 103 license, 50.22, is applicable.
50.33(g)	Not applicable - for nuclear power reactors
50.33(i)	Not applicable - for electric power production facility
50.33a(a) through (d)	Not applicable - for nuclear power reactors. Note that Anti-trust issues relative to the equip ent and facilities were also addressed with DOE.
50.34(a)(1)	Part 100, Site Evaluation Factors is no applicable in that it applies to Nuclear Power Reactors.
50.34(a)(3), (4),(5),(7), (11)	Not applicable - applies to nuclear power reactors
50.34(b)(2) (4),(5)	Not applicable - applies to nuclear power reactors and plants processing radioactive materials
50.34(b)(6) (iii),(iv)	Not applicable - In that there are no radiological hazards associated with the production of stable isotopes the inclusion of the requisite plans in the FSAR are not required. In addition SECY88-88 limits the review to issues relating to common defense and security and NEPA findings.
50.34(b)(6) (ii),(vii)	Not applicable - applies to nuclear power reactors and fuel processing plants
50.34(b)(6) (vi),50.36	Not applicable - The intent of the technical specifications are to assure safe operating and control limits to prevent or mitigate radiological releases from nuclear reactor plants or nuclear fuel processing plants. Since the residual uranium in the centrifuge and associate piping is

	fixed and in the form of uranyl fluoride (UO_2F_2) no releases posing a threat to the safety and health of the public will occur. As it relates to safeguards, the administrative and monitoring controls are contained in the AlChemIE Security Plan.
50.34(b)(8) 50.54(i-1), (j),(k),(l) (m),(y)	Not Applicable - Licensing of operators in accordance with 10CFR55 for a stable isotope production facility is not required since plant operations pose no radiological threat to public health and safety.
50.34(b)(9)	Not applicable - applies to nuclear power reactors.
50.34(c)(d) (e) 50.54(p)	Applies except that the security plan will be prepared in accordance with 10 CFR 95 and not in accordance with 10CFR73. 10CFR73 provides requirements for security to prevent radiological sabotage and theft of special nuclear material. Since AlChemIE will be processing only non-radioactive isotopes there are no concerns relative to the release of large amounts of radiation (SECY88-88). As it relates to special nuclear material there are approximately 170 grams of U-235 contained in uranyl fluoride and plated on the interior surfaces of the rotor and piping. Since this material is not in a useable form and theft impossible, this is not of concern. Therefore, for security purpose AlChemIE is required to protect the classified information and equipment and have a program in place to provide assurance that no uranium is being enriched in the plant. These requirements are met by the AlChemIE security plan written in accordance with 10CFR95 and the NRC "Proposed License Conditions for Safeguards Licensing of AlChemIE Operations at CPDF." For part (e), this plan is not classified.
50.34(f)	Not applicable - applies to nuclear power reactors
50.34(g)	Not applicable - Standard Review Plans for LWR's
50.34a	Not applicable - applies to nuclear power reactors
50.36a	Not applicable - applies to nuclear power reactors
50.41	Not applicable - The application is for a class 103 license.
50.43,50.44	Does not apply. Applicable to commercial nuclear power production facilities.

50.46,50.47 50.48,50.49	Does not apply. Applicable to Nuclear Power Reactors.
50.54(a)	Not applicable. A quality assurance program in accordance with Appendix B is not required.
50.54(o)	Not applicable. Containment requirements for water cooled reactors.
50.54(q),(r) (s),(t),(u), (w),(z),(bb)	Not applicable - applies to nuclear power reactors
50.55 (e)	Not applicable - The plant has already been constructed and its operation will not pose radiological safety problems. For AlChemIE's operations, a significant breakdown would be in the area of security and safeguards. Reporting requirements are delineated in the security plan as required by Part 95.
50.55 (f)	Not applicable since Appendix B to 10 CFR 50 is not required.
50.55a	Not applicable - applies to nuclear power reactors
50.57(a)(5)	Insurance requirements of part 140 are not applicable to AlChemIE operations. That is nuclear idemnity insurance is not required. Additionally Price - Anderson has not been reinacted.
50.57(c)	Applicable to power reactors.
50.60,50.61	Not applicable - Fracture Toughness requirements for nuclear reactors.
50.62	Not applicable - ATWS requirements for power reactors.
50.64	Not applicable - limits on HEU in domestic non-power reactors
50.71(e)	Not applicable - applies to nuclear power reactors
50.72, 50.73	Not applicable - applies to nuclear power reactors
Appendices A, B,F,G,H,I,J, K,M,N,O,Q,R	Not applicable - applies to nuclear power reactors

10 CFR 50 EXEMPTION REQUIREMENTS

Pursuant to the provisions of 10 CFR 50.12(a)(2)(ii), AlChemIE hereby requests a specific exemption from the following Parts of 10 CFR 50, for the reasons hereafter stated:

1. A special exemption is requested from 10 CFR 50.34(a)(10) and (b) (6) (v).

   A. 10 CFR 50.34(a)(10) requires a discussion of the applicant's preliminary plans for coping with emergencies and references Appendix E as setting forth the items in said plan. A review of Appendix E shows that it concerns, "The potential radiological hazards to the public associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR 50 and 10 CFR 70." <Appendix E, I. Introduction, third paragraph>.

      AlChemIE is not operating research or test reactors or fuel facilities and, by project definition and the parameters of the license sought, will pose no "potential radiological release." The AlChemIE facility is to be used for the production of stable isotopes.

   B. 10 CFR 50.34 (b) (6) (v) also addresses emergency plans and references Appendix E.

   C. Under the authority of 10 CFR 50.12 (a) (2) (ii), the Commission may, upon application, grant exemptions from the requirements of 10 CFR 50 if "special circumstances" are present. Special circumstances are deemed present whenever "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."<ii>.

   D. As stated earlier, AlChemIE will not be processing special nuclear materials and poses no threat of radiological release. SECY 88-88, dated June 7, 1988, states "The chemical hazards, if any, are unrelated to materials licensed under the Atomic Energy Act."<COPY ATTACHED>.

   E. The primary issue in NRC's granting AlChemIE a license is assuring adequate protection of common defense and security. This has been addressed in AlChemIE's Security Plan. Also, and as published in Federal Register notices 53FR15317 and 53FR15315, dated April 28, 1988, the requested license would govern possession of the centrifuge machines, but not the enriched stable isotopes produced.

F. AlChemIE is developing handling, operating and emergency procedures for each chemical compound that is to be processed. These procedures will be reviewed and approved by DOE prior to use of any chemical compound in the Centrifuge Plant Demonstration Facility. Additionally, under its Air Quality Permit from the Tennessee Department of Health and Environment, AlChemIE is required to report releases of toxic gases.

For the foregoing reasons, AlChemIE verily feels that special circumstances exist which make it appropriate and proper to exempt AlChemIE from 10 CFR 50.34 (a) (10) and (b) (6) (v), and pursuant to 10 CFR 50.12 (a) (2) (ii) AlChemIE does hereby make application for said exemptions.

10 CFR 50 - SUPPLEMENTARY INFORMATION

PART	EXPLANATION
50.34(a)(9) 50.34(b)(7)	The technical qualifications of AlChemIE personnel to support the safeguards requirements of Section 19 to the Security Plan are as follows: 1. AlChemIE's current technical staff consists of two (2) chemists with doctoral degrees, three engineers with masters degrees, two in nuclear physics and one in energy conversion. 2. AlChemIE's operations staff will consist of personnel with, as a minimum, a two year technical degree, or equivalent.
50.36 (b)	Prior to operation with any toxic or hazardous gas AlChemIE is required by DOE to perform a safety analysis. This analysis includes an environmental impact assessment for accidental releases and the development of handling, operating, fire fighting and clean up procedures. The procedures are also provided to the emergency response teams, fire fighting, medical, security, etc., at the Oak Ridge, Gaseous Diffusion Plant. In addition, the State of Tennessee, Department of Health and Environment also requires notification of accidental releases.
50.42(a)	Although AlChemIE will posses some uranium it is not in a usable form. The uranium is in the form of uranyl flucride (UO_2F_2) and is plated out on the centrifuge rotor and associated piping. Previous operations producing stable isotopes using contaminated centrifuge machines has shown that the uranyl fluoride remains in the machines and piping.

50-604

AlChemIE, Inc.

All Chemical Isotope Enrichment, Inc.

RECEIVED
AUG 19 1988
U.S. NUCLEAR REGULATORY COMMISSION
NMSS
Mail Section

DOCKETED
USNRC
AUG 19 1988
NMSS
MAIL SECTION
DOCKET CLERK

Docket No. 50-604

August 17, 1988

U.S. Nuclear Regulatory Commission
Document Control Desk
Office Nuclear Material Safety & Safeguards
Washington, DC 20555

Attention: Mr. Hugh L. Thompson, Jr.
6A-4 NMSS Docket Material

Gentlemen:

AlChemIE, in its licensing application dated November 17, 1987 included as attachments the 10CFR50.33, General Information, and 10CFR50, 51 Non-applicability and Exemptions Requirements. These attachments have been revised and are being resubmitted as follows:

1. 10CFR50.33 - General Information
2. 10CFR50 - Nonapplicability
3. 10CFR50 - Exemption Requests
4. 10CFR50 - Supplementary Information

The above is applicable to AlChemIE Facility 2 - Oliver Springs. Should you have any questions please contact Mr. W.A. Pfeifer at AlChemIE.

Respectfully submitted,

ALCHEMIE, INC.

John H. Smelser, Jr.

John H. Smelser, Jr.
Chief Executive Officer

cc: Dr. A. Thomas Clark, Jr./NRC

Pine Ridge Office Park, Suite 202-B 702 Illinois Ave., Oak Ridge, TN 37830 (615) 482-0029

24648

10CFR50.33 - General Information

a) All Chemical Isotope Enrichment, Inc. (AlChemIE)

b) AlChemIE, Inc.
Pine Ridge Office Park, Suite B-202
702 South Illinois Avenue
Oak Ridge, Tennessee 37830

c) AlChemIE's business will be to enrich stable isotopes using the gas centrifuge technology developed by the U.S. Department of Energy. The isotopes will be used in medical, research and industrial applications.

d) AlChemIE, Inc. is a private corporation incorporated under the laws of the State of Tennessee. The principal location for business will be the AlChemIE Facility 2 - Oliver Springs in Oliver Springs, Tennessee.

Name	Address	Citizenship
Ben Mullins	P.O. Box 506 Oak Ridge, TN 37831	USA
S.A. Irving	Rt. 7 Dixon Road Lenior City, TN 37771	USA
A.A. Carey	Rt. 7 Dixon Road Lenior City, TN 37771	USA
M. Miller	Rt. 2 Box 248 Powell, TN 37849	USA

AlChemIE is not owned or dominated by any alien, foreign corporation or foreign government.

e) The class of license applied for is a Class 103 for commercial and industrial facilities as defined in 10CFR50.22. The license is sought for a period of forty (40) years.

f) As it relates to AlChemIE's financial data, please refer to our submittal to the NRC dated August ___, 1988.

As it relates to decontamination and decommissioning of the facility at the end of its useful life AlChemIE has prepared a cost assessment of the AlChemIE Facility - 1 CPDF. In addition the Department of Energy (DOE) requires assurance that adequate funding will be available for the find disposition of all classified and uranium contaminated equipment and materials received from DOE. The gas centrifuge equipment and piping includes classified material, uranium contaminated material and Resource Conservation and Recovery Act (RCRA) controlled material. After commercial operations begin, this equipment, and associated auxiliaries will become contaminated or be further contaminated by the feed compounds. The product residue, in many cases, is a toxic material and must have its disposal strictly controlled.

Decommissioning of this facility at the end of its life will require disposal of parts of the process equipment and auxiliaries in one of the following classifications:

- o Classified burial grounds
- o Uranium contaminated burial grounds
- o Toxic material burial grounds
- o Landfill for industrial refuse

All classified equipment and material must be buried in a DOE classified burial ground, and although uranium contaminated materials are acceptable at the DOE facility, toxic substances are not. All classified items contaminated with toxic material will be decontaminated before burial.

In each of the respective commercial burial grounds, unclassified uranium contaminated and toxic materials can be received but not co-mingled. Uranium contaminated materials must go to the radioactive material burial ground and toxic material must go to the toxic material burial ground. Finally, industrial landfills may not receive any classified, uranium contaminated or toxic materials. Therefore, a major portion of the decommissioning effort will involve segregating each class of material into discrete categories for final disposal while trying to keep the cost of the decommission to a minimum.

It should be noted that this stable isotope enriching plant will be construced in stages, presently planned as 120 machines initially plus three additional stages of 160 machines each for the total of 600 centrifuges. Hence, the decommissioning scope, and therefore the cost, will increase with time. Centrifuge machines will also fail with time. This in turn will reduce the total decommissioning cost at plant shutdown since these failed classified and/or contaminated machine components received from DOE will be disposed of as appropriate and as required at the time of failure. Thus, estimates for decommissioning and disposal of the classified and contaminated equipment received from DOE or contaminated by AlChemIE are listed below under two headings in order to establish a range of costs. These three estimates are for the following: (1) No machines assembled with all GCEP equipment in storage at Oliver Springs, (2) 120 machines plant in operation (3) 600 machine platn in operation.

Summary of Decommissioning Costs & Funding Requirements

for AlChemIE Facility 2 - Oliver Springs

	Equip. in Storage Only	120 Mch Plt Oprtn-40 RCRA	600 Mch Plt Oprtn-80 RCRA
Net Decommissioning Costs, Table II	$2,259,137	$2,772,414	$3,680,227
Minimum Value	2,000,000	1,750,000	1,500,000
Net Funding	$ 269,137	$1,022,414	$2,180,227

To assure that the appropriate funds are available AlChemIE will set aside funds in escrow and/or through debt financing. The funds will be obtained from AlChemIE's sales. Starting in 1988 through 1993 AlChemIE expects sales to increase from 4 million to approximately 95 million.

g) Applicable to nuclear power reactors.

h) As presently forecast, the earliest completion date for the facility at Oliver Springs would be mid 1992. The latest competion date is 1996.

i) Applicable to electrical generating and distribution facilities

j) This application does not contain Restricted Data.

10 CFR 50 NONAPPLICABILITY

(Revision 1 to November 17, 1987 Submitted)

Pursuant to 10 CFR 50.12(a)(2)(ii) the following averments of nonapplicability to 10 CFR 50 are hereby tendered. The facility to be licensed is for the production of stable isotopes only.

Part	Explanation
50.10(e)	Not applicable - Applies to a utilization facility
50.21	Does not apply. A Class 103 license, 50.22, is applicable.
50.33(g)	Not applicable - for nuclear power reactors
50.33(i)	Not applicable - for electric power production facility
50.33a(a) through (d)	Not applicable - for nuclear power reactors. Note that Anti-trust issues relative to the equipment and facilities were also addressed with DOE.
50.34(a)(1)	Part 100, Site Evaluation Factors is no applicable in that it applies to Nuclear Power Reactors.
50.34(a)(3), (4),(5),(7), (11)	Not applicable - applies to nuclear power reactors
50.34(b)(2) (4),(5)	Not applicable - applies to nuclear power reactors and plants processing radioactive materials
50.34(b)(6) (iii),(iv)	Not applicable - In that there are no radiological hazards associated with the production of stable isotopes the inclusion of the requisite plans in the FSAR are not required. In addition SECY88-88 limits the review to issues relating to common defense and security and NEPA findings.
50.34(b)(6) (ii),(vii)	Not applicable - applies to nuclear power reactors and fuel processing plants
50.34(b)(6) (vi),50.36	Not applicable - The intent of the technical specifications are to assure safe operating and control limits to prevent or mitigate radiological releases from nuclear reactor plants or nuclear fuel processing plants. Since the residual uranium in the centrifuge and associate piping is

	fixed and in the form of uranyl fluoride (UO_2F_2) no releases posing a threat to the safety and health of the public will occur. As it relates to safeguards, the administrative and monitoring controls are contained in the AlChemIE Security Plan.
50.34(b)(8) 50.54(i-1), (j),(k),(l) (m),(y)	Not Applicable - Licensing of operators in accordance with 10CFR55 for a stable isotope production facility is not required since plant operations pose no radiological threat to public health and safety.
50.34(b)(9)	Not applicable - applies to nuclear power reactors.
50.34(c)(d) (e) 50.54(p)	Applies except that the security plan will be prepared in accordance with 10 CFR 95 and not in accordance with 10CFR73. 10CFR73 provides requirements for security to prevent radiological sabotage and theft of special nuclear material. Since AlChemIE will be processing only non-radioactive isotopes there are no concerns relative to the release of large amounts of radiation (SECY88-88). As it relates to special nuclear material there are approximately 640 grams of U-235 contained in uranyl fluoride and plated on the interior surfaces of 720 centrifuge rotors. Since this material is not in a useable form and theft impossible, this is not of concern. Therefore, for security purpose AlChemIE is required to protect the classified information and equipment and have a program in place to provide assurance that no uranium is being enriched in the plant. These requirements are met by the AlChemIE security plan written in accordance with 10CFR95 and the NRC "Proposed License Conditions for Safeguards Licensing of AlChemIE Operations at CPDF." For part (e), this plan is not classified.
50.34(f)	Not applicable - applies to nuclear power reactors
50.34(g)	Not applicable - Standard Review Plans for LWR's
50.34a	Not applicable - applies to nuclear power reactors
50.36a	Not applicable - applies to nuclear power reactors
50.41	Not applicable - The application is for a class 103 license.
50.43,50.44	Does not apply. Applicable to commercial nuclear power production facilities.

50.46,50.47 50.48,50.49	Does not apply. Applicable to Nuclear Power Reactors.
50.54(a)	Not applicable. A quality assurance program in accordance with Appendix B is not required.
50.54(o)	Not applicable. Containment requirements for water cooled reactors.
50.54(q),(r) (s),(t),(u), (w),(z),(bb)	Not applicable - applies to nuclear power reactors
50.55 (e)	Not applicable - The plant when constructed and its operation will not pose radiological safety problems. For AlChemIE's operations, a significant breakdown would be in the area of security and safeguards. Reporting requirements are delineated in the security plan as required by Part 95.
50.55 (f)	Not applicable since Appendix B to 10 CFR 50 is not required.
50.55a	Not applicable - applies to nuclear power reactors
50.57(a)(5)	Insurance requirements of part 140 are not applicable to AlChemIE operations. That is nuclear idemnity insurance is not required. Additionally Price - Anderson has not been reinacted.
50.57(c)	Applicable to power reactors.
50.60,50.61	Not applicable - Fracture Toughness requirements for nuclear reactors.
50.62	Not applicable - ATWS requirements for power reactors.
50.64	Not applicable - limits on HEU in domestic non-power reactors
50.71(e)	Not applicable - applies to nuclear power reactors
50.72, 50.73	Not applicable - applies to nuclear power reactors
Appendices A, B,F,G,H,I,J, K,M,N,O,Q,R	Not applicable - applies to nuclear power reactors

10 CFR 50 EXEMPTION REQUIREMENTS

Pursuant to the provisions of 10 CFR 50.12(a)(2)(ii), AlChemIE hereby requests a specific exemption from the following Parts of 10 CFR 50, for the reasons hereafter stated:

1. A special exemption is requested from 10 CFR 50.34(a)(10) and (b) (6) (v).

   A. 10 CFR 50.34(a)(10) requires a discussion of the applicant's preliminary plans for coping with emergencies and references Appendix E as setting forth the items in said plan. A review of Appendix E shows that it concerns, "The potential radiological hazards to the public associated with the operation of research and test reactors and fuel facilities licensed under 10 CFR 50 and 10 CFR 70." <Appendix E, I. Introduction, third paragraph>.

      AlChemIE is not operating research or test reactors or fuel facilities and, by project definition and the parameters of the license sought, will pose no "potential radiological release." The AlChemIE facility is to be used for the production of stable isotopes.

   B. 10 CFR 50.34 (b) (6) (v) also addresses emergency plans and references Appendix E.

   C. Under the authority of 10 CFR 50.12 (a) (2) (ii), the Commission may, upon application, grant exemptions from the requirements of 10 CFR 50 if "special circumstances" are present. Special circumstances are deemed present whenever "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."<ii>.

   D. As stated earlier, AlChemIE will not be processing special nuclear materials and poses no threat of radiological release. SECY 88-88, dated June 7, 1988, states "The chemical hazards, if any, are unrelated to materials licensed under the Atomic Energy Act."<COPY ATTACHED>.

   E. The primary issue in NRC's granting AlChemIE a license is assuring adequate protection of common defense and security. This has been addressed in AlChemIE's Security Plan. Also, and as published in Federal Register notices 53FR15317 and 53FR15315, dated April 28, 1988, the requested license would govern possession of the centrifuge machines, but not the enriched stable isotopes produced.

F. AlChemIE is developing handling, operating and emergency procedures for each chemical compound that is to be processed. Additionally, under an Air Quality Permit from the Tennessee Department of Health and Environment, AlChemIE will be required to report releases of toxic gases.

For the foregoing reasons, AlChemIE verily feels that special circumstances exist which make it appropriate and proper to exempt AlChemIE from 10 CFR 50.34 (a) (10) and (b) (6) (v), and pursuant to 10 CFR 50.12 (a) (2) (ii) AlChemIE does hereby make application for said exemptions.

10 CFR 50 - SUPPLEMENTARY INFORMATION

PART	EXPLANATION
50.34(a)(9) 50.34(b)(7)	The technical qualifications of AlChemIE personnel to support the safeguards requirements of Section 19 to the Security Plan are as follows: 1. AlChemIE's current technical staff consists of two (2) chemists with doctoral degrees, three engineers with masters degrees, two in nuclear physics and one in energy conversion. 2. AlChemIE's operations staff will consist of personnel with, as a minimum, a two year technical degree, or equivalent.
50.36 (b)	Prior to operation with any toxic or hazardous gas AlChemIE is required by DOE to perform a safety analysis. This analysis includes an environmental impact assessment for accidental releases and the development of handling, operating, fire fighting and clean up procedures. The procedures are also provided to the emergency response teams, fire fighting, medical, security, etc., at the Oliver Springs Fire Department. In addition, the State of Tennessee, Department of Health and Environment also requires notification of accidental releases.
50.42(a)	Although AlChemIE will posses some uranium it is not in a usable form. The uranium is in the form of uranyl fluoride (UO_2F_2) and is plated out on the centrifuge rotor and associated piping. Previous operations producing stable isotopes using contaminated centrifuge machines has shown that the uranyl fluoride remains in the machines and piping.