

UNITED STATES LICENSE AUTHORITY FILE COPY  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

Superseded

LOCKHEED AIRCRAFT CORPORATION

2-21-66

DOCKET NO. 50-172

AMENDMENT TO FACILITY LICENSE

License No. R-86  
Amendment No. 7

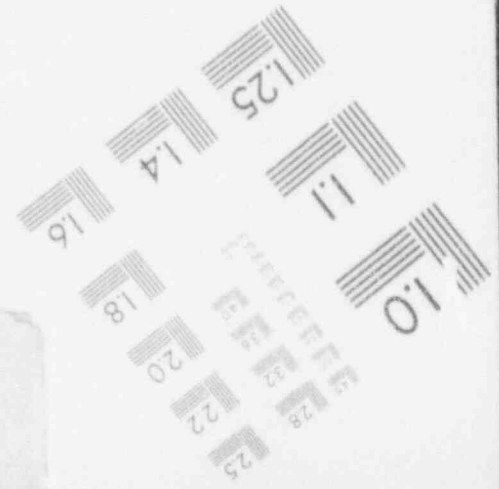
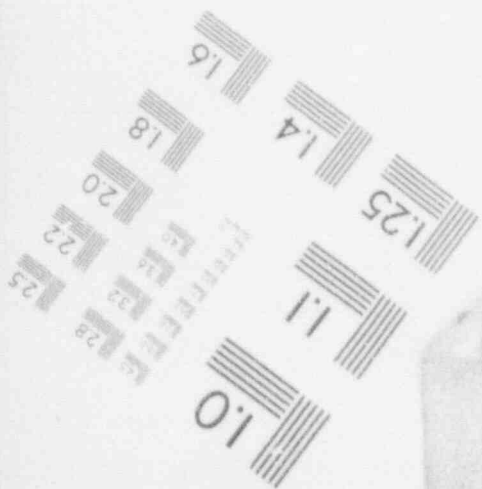
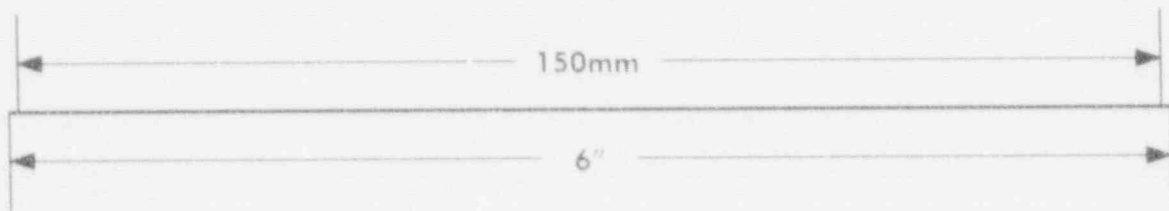
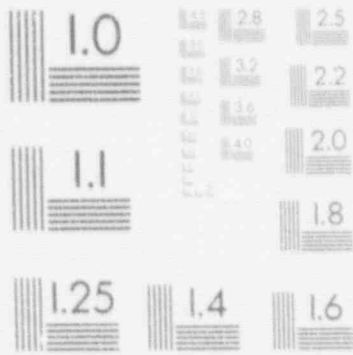
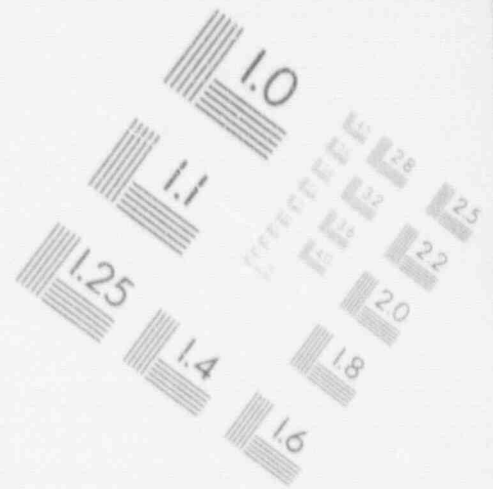
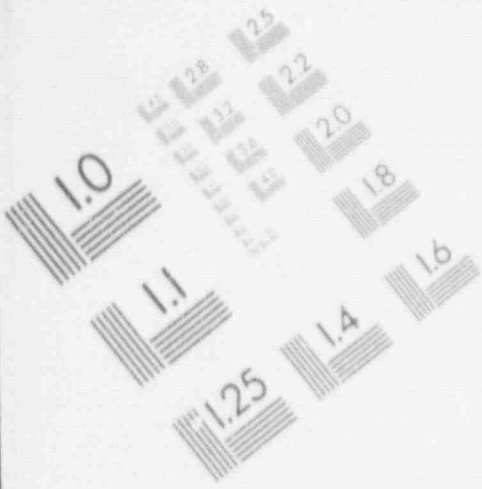
Upon the transfer of title to the facility by the General Services Administration to the Lockheed Aircraft Corporation and the notification by Lockheed Aircraft Corporation to the Director, Division of Reactor Licensing of the transfer, License No. R-86, as amended, shall be further amended in its entirety to read as follows:

1. This license applies to the Radiation Effects Reactor (RER), a heterogeneous pressurized water-type nuclear reactor (hereinafter "the reactor") which is located on a 10,000 acre site in Dawson County, Georgia, previously known as Air Force Plant No. 67, and described in Lockheed Aircraft Corporation's (hereinafter "Lockheed") application for license dated February 23, 1962, and succeeding amendments thereto, including the application for transfer of license dated January 18, 1966, (hereinafter collectively referred to as "the application").
2. Pursuant to the Act and having considered the record in this matter, the Atomic Energy Commission (hereinafter "the Commission") finds that:
  - A. The application for amendment dated January 18, 1966, complies with the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations set forth in Title 10, Chapter 1, CFR;
  - B. The reactor as constructed will operate in conformity with the application and in conformity with the Act and the rules and regulations of the Commission;
  - C. There is reasonable assurance that the reactor can be operated at the designated location without endangering the health and safety of the public;
  - D. Lockheed is technically and financially qualified to operate the reactor, to assume financial responsibility for payment of Commission charges for special nuclear material and to undertake and carry out the proposed activities in accordance with the Commission's regulations;
  - E. Issuance of a license authorizing Lockheed to possess, use and operate the facility and to receive, possess, and use the special nuclear material, in the manner proposed in the application, will not be inimical to the common defense and security or the health and safety of the public;

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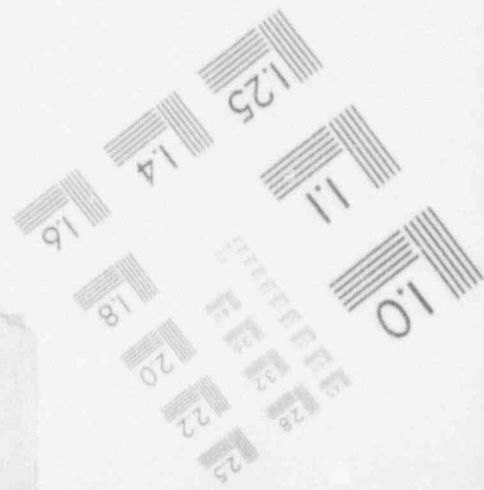
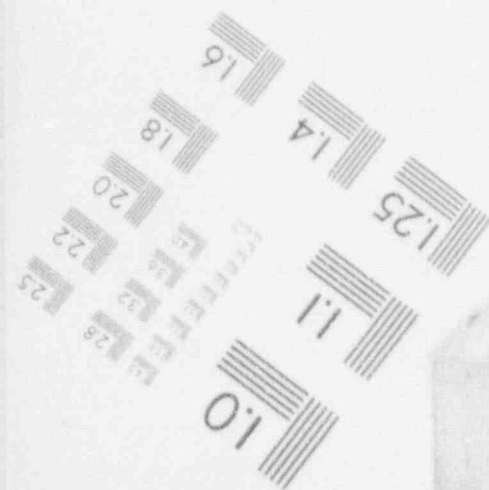
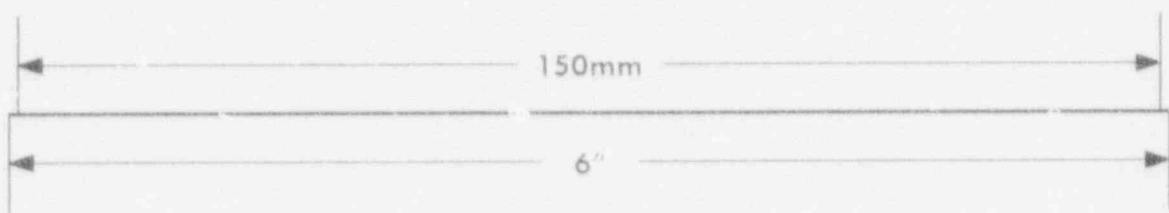
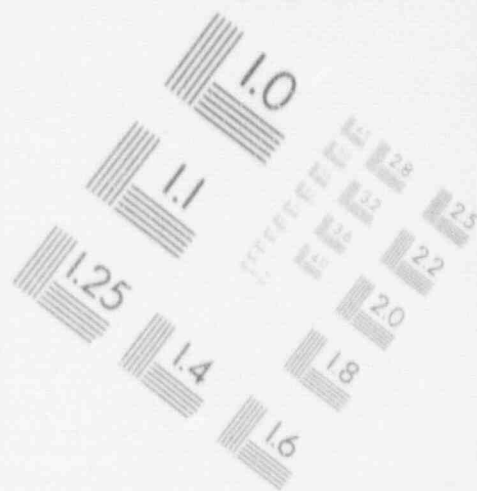
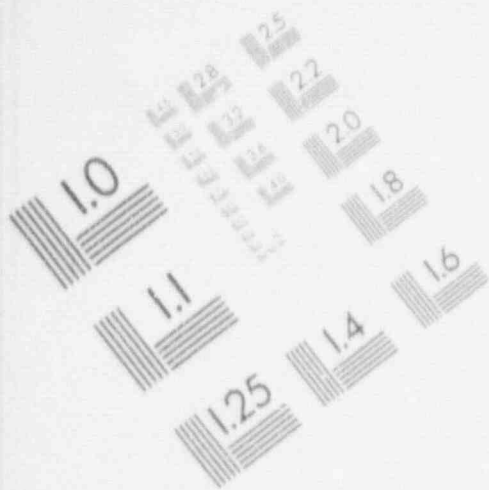
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## IMAGE EVALUATION TEST TARGET (MT-3)



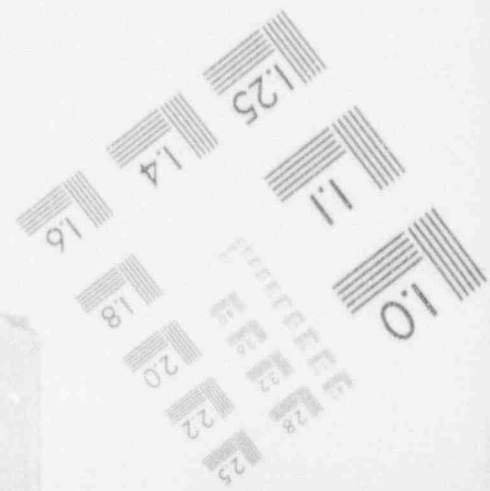
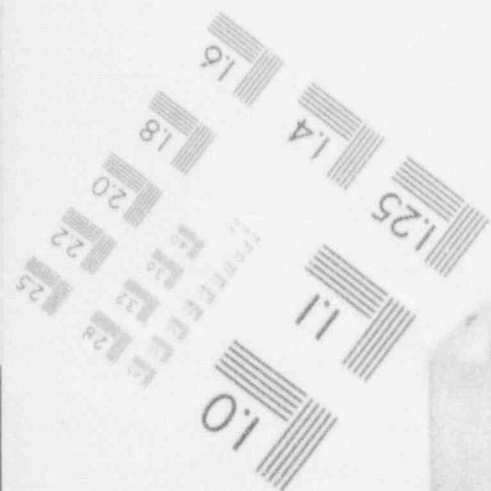
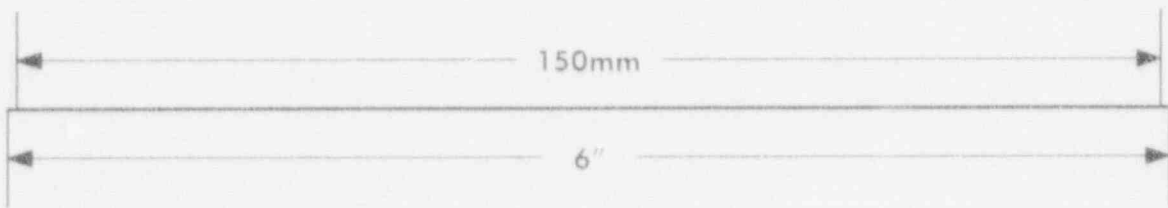
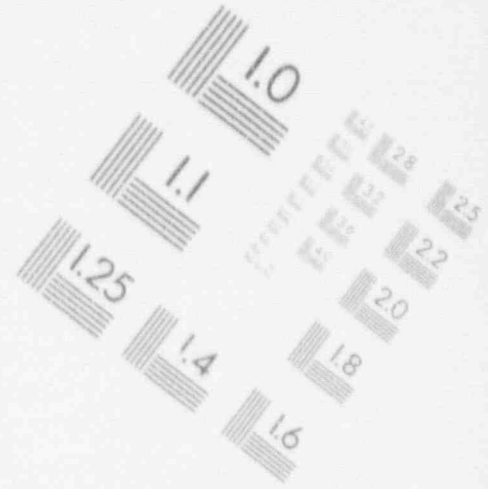
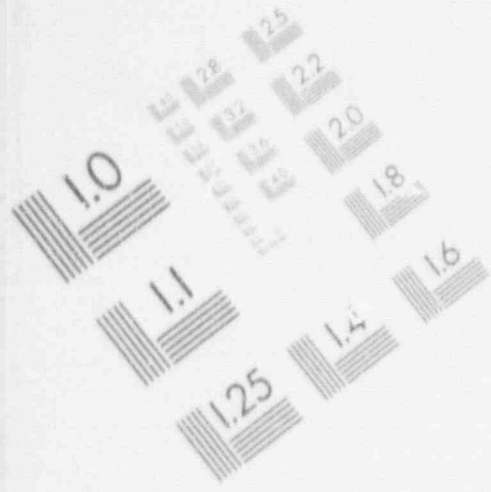
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## IMAGE EVALUATION TEST TARGET (MT-3)



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## IMAGE EVALUATION TEST TARGET (MT-3)



- F. Lockheed has submitted proof of financial protection which satisfies the requirements of Commission regulations currently in effect.
- 3. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
  - A. Pursuant to Section 104 c of the Act and Title 10, CFR, Chapter 1, Part 50, "Licensing of Production and Utilization Facilities", Lockheed to possess, use, and operate the reactor as a utilization facility at the designated location in Dawson County, Georgia;
  - B. Pursuant to the Act and Title 10, CFR, Chapter 1, Part 70, "Special Nuclear Material", Lockheed to possess, but not to separate, such byproduct material as may be incidentally produced by operation of the reactor.
- 4. This license shall be deemed to contain and be subject to the conditions specified in Part 20, Section 30.34 of Part 30, Section 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70, Title 10, Chapter 1, CFR, and to be subject to all applicable provisions of the Act, and to the rules and regulations and orders of the Commission, now or hereafter in effect, and to the additional conditions specified below:
  - A. Lockheed may operate the reactor at power levels up to a maximum of 3,000 kilowatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A attached to License Amendments No. 4 and 5, and in Changes No. 1 through 5 to this license (hereinafter referred to as the "Technical Specifications") are hereby incorporated in this license. Lockheed shall operate the facility in accordance with the Technical Specifications. Lockheed may make changes in the Technical Specifications only when authorized by the Commission in accordance with the Provisions of Section 50.59 of the Commission's Regulations (Title 10, CFR, Chapter 1, Part 50, "Licensing of Production and Utilization Facilities").

C. Records

In addition to those otherwise required under this license and applicable regulations. Lockheed shall keep the following records:

- (1) Reactor operating records, including power levels.
- (2) Records of all experimental irradiations.
- (3) Records showing radioactivity released or discharged into the air or water beyond the effective control of Lockheed as measured at the point of such release or discharge.
- (4) Records of emergency reactor scrams, including reasons for emergency shutdowns.

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- (5) Records of environmental surveys.
  - (6) Records of meteorological conditions that prevail during reactor operations such that inversion conditions can be readily identified and the data taken can be used to calculate Argon-41 concentrations to demonstrate compliance with Title 10, Chapter 1, CFR, Part 20.
- D. Lockheed shall measure and record the following values after the reactor has commenced operation with each different core loading pattern for operation at 3,000 kilowatts (thermal):
- (1) Maximum excess reactivity of the facility, not including the worth of control rods or other control devices such as burnable poison strips or soluble poison, or any experiments;
  - (2) Total control rod worth;
  - (3) Minimum shutdown margin both at room and operating temperatures;
  - (4) Maximum worth of the single control rod of highest reactivity value.

E. Reports

In addition to reports otherwise required under this license and applicable regulations:

- (1) Lockheed shall inform the Commission of any incident or condition relating to the operation of the facility which prevented or could have prevented a nuclear system from performing its safety function as described in the Technical Specifications or in the Hazards Summary Report. For each such occurrence, Lockheed shall promptly notify by telephone or telegraph, the Director of the appropriate Atomic Energy Commission Regional Compliance Office listed in Appendix D of 10 CFR 20 and shall submit within 10 days a report in writing to the Director, Division of Reactor Licensing, with a copy to the Regional Compliance Office.
- (2) Lockheed shall report to the Commission in writing within thirty (30) days of its observed occurrence any substantial variance disclosed by operation of the facility from performance specifications contained in the Hazards Summary Report or the Technical Specifications.
- (3) Lockheed shall report to the Commission in writing within thirty (30) days of its occurrence any significant changes in transient or accident analysis, as described in the Hazards Summary Report.
- (4) Lockheed shall make an annual report in writing to the Commission which summarizes the following:



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- (a) Descriptions of the irradiation experiments performed and any unusual events involved in handling or operation.
  - (b) Number of emergency reactor scrams and unscheduled shutdowns with a brief explanation of the cause of each.
  - (c) Principal maintenance performed and replacements made in the reactor and associated systems.
  - (d) Results of environmental surveys in connection with the measurement of on-site soil activation, activated soil transport, and the levels in the Etowah River.
  - (e) Significant changes made in operating procedures and in plant organization.
  - (f) Changes made in the facility and tests or experiments performed pursuant to 10 CFR 50.59 (b) without prior Commission approval.
5. Pursuant to Section 50.60 of the regulations in Title 10, Chapter 1, CFR, Part 50, the Commission has allocated to Lockheed for use in connection with the facility 18.8 kilograms of uranium-235 contained in uranium enriched in the isotope uranium-235. Estimated schedules of special nuclear material transfers to Lockheed and returns to the Commission are contained in Appendix B, which is attached hereto. Shipments by the Commission to Lockheed in accordance with Column 2 in Appendix B will be conditioned upon Lockheed's return to the Commission of material substantially in accordance with Column 3 of the Appendix B.
6. This license shall expire on April 14, 1969.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed By  
R.L. Doan

Director  
Division of Reactor Licensing

Date of Issuance: FEB 21 1966

Appendix A  
Appendix B

Superseded

APPENDIX B

LOCKHEED AIRCRAFT CORPORATION

RADIATION EFFECTS REACTOR

FACILITY LICENSE

ESTIMATED SCHEDULE OF TRANSFERS OF SPECIAL NUCLEAR

MATERIAL FROM THE COMMISSION TO LOCKHEED

AIRCRAFT CORPORATION AND TO THE COMMISSION

FROM LOCKHEED AIRCRAFT CORPORATION

(1) Date of Transfer (Fiscal Year)	(2) Transfers from AEC to LAC Kgs. U-235	(3) Returns by LAC to AEC Recoverable U-235 Cold Scrap Spent Hot Fuel		(4) Net Yearly Distri- bution Including Cumulative Losses Kgs. U-235	(5) Cumulative Distributi- on Including Cumulative Losses Kgs. U-235
1963	17.9	0	0	17.9	17.9
1964	0	0	0	0	17.9
1965	0	0	0	0	17.9
1966	0	0	0	0	17.9
1967	6.8	1.6 <sup>(a)</sup>	4.9	0.3	18.2
1968	6.8	1.6 <sup>(a)</sup>	4.9	0.3	18.5
1969	6.8	1.6 <sup>(a)</sup>	4.9	0.3	18.8

(a) Assumed to be returned by fabricator

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