

030-31138  
Inst. 23753

NRC Form 313 I (12-81) 10 CFR 30  <b>APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL</b>	U.S. NUCLEAR REGULATORY COMMISSION		1. APPLICATION FOR: (Check and/or complete as appropriate)
			<input checked="" type="checkbox"/> a. NEW LICENSE
	See attached instructions for details.  Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.		b. AMENDMENT TO: LICENSE NUMBER
			c. RENEWAL OF: LICENSE NUMBER

2. APPLICANT'S NAME (Institution, firm, person, etc.) <b>City of Detroit Mistersky Power Station</b>  TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION <b>(313) 842-3350</b>	3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION <b>Craig D. DesChenes, M.E. Power Production</b>  TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION <b>(313) 842-3350 ext. 122</b>
4. APPLICANT'S MAILING ADDRESS (Include Zip Code) (Address to which NRC correspondence, notices, bulletins, etc., should be sent.) <b>Mistersky Power Station 5425 W. Jefferson Detroit, MI 48209</b>	5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED (Include Zip Code) <b>5425 W. Jefferson Detroit, MI 48209</b>

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL (See Items 16 and 17 for required training and experience of each individual named below)	
FULL NAME	TITLE
a. James Coon	Electrical Engineer - Power Production
b. Ronald Cook	Electrical Foreman - Power Production
c. Rodney Robinson	Instrumentation Sub-Foreman - Power Prod.
7. RADIATION PROTECTION OFFICER <b>Jeffrey Woods</b>	Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

L I N E  NO.	ELEMENT AND MASS NUMBER  A	CHEMICAL AND/OR PHYSICAL FORM  B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)  C	MAXIMUM NUMBER OF MILLCURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME  D
(1)	Cs-137	Sealed	Texas Nuclear Capsule 57157C	100mCi
(2)				
(3)	9001310206 REG3 LIC30 21-23753-01	890606 PDR		
(4)				

DESCRIBE USE OF LICENSED MATERIAL  
E

(1)	See attached sheet: Attachment I
(2)	
(3)	
(4)	RECD 04-27-89

RECEIVED  
APR 27 1989  
LOG  
REMITTER  
CHECK  
OR  
EX 3P  
3/28/89  
320810

**9. STORAGE OF SEALED SOURCES**

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED.	NAME OF MANUFACTURER	MODEL NUMBER
	A.	B.	C.
(1)	6-on Precipitator Hoppers Level gages	Texas Nuclear	5197
(2)	1-on Fly-ash silo Level gages	Texas Nuclear	5197
(3)			
(4)			

**10. RADIATION DETECTION INSTRUMENTS**

LINE NO.	TYPE OF INSTRUMENT	MANUFACTURER'S NAME	MODEL NUMBER	NUMBER AVAILABLE	RADIATION DETECTED <i>(alpha, beta, gamma, neutron)</i>	SENSITIVITY RANGE <i>(milliroentgens/hour or counts/minute)</i>
	A	B	C	D	E	F
(1)	No radiation detection instrumentation is necessary to possess and utilize these devices safely.					
(2)						
(3)						
(4)						

**11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10**

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY  N/A	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.  N/A
--	--

**12. PERSONNEL MONITORING DEVICES**

TYPE <i>(Check and/or complete as appropriate.)</i> A	SUPPLIER <i>(Service Company)</i> B	EXCHANGE FREQUENCY C
<input type="checkbox"/> (1) FILM BADGE  <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)  <input type="checkbox"/> (3) OTHER <i>(Specify):</i> _____ _____ _____	None Required See attached sheet: Attachment II	<input type="checkbox"/> MONTHLY  <input type="checkbox"/> QUARTERLY  <input type="checkbox"/> OTHER <i>(Specify):</i> _____ _____

**13. FACILITIES AND EQUIPMENT** (Check where appropriate and attach annotated sketch(es) and description(s).)

<input type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS <i>(Include filtration, if any)</i> , ETC. <input type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING <i>(fixed and/or temporary)</i> , ETC. <input type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. <input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	N/A
--	-----

**14. WASTE DISPOSAL**

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

**No waste disposal is involved. In the event that the gauge is damaged or its use discontinued, we shall notify Texas Nuclear for removal and return the gauge for repair or disposal of the source material.**



**INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17**

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

**See Attachment III**

16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

- a. Principles and practices of radiation protection.
- b. Radioactivity measurement standardization and monitoring techniques and instruments.
- c. Mathematics and calculations basic to the use and measurement of radioactivity.
- d. Biological effects of radiation.

**See Attachment IV**

17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

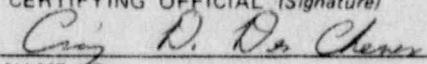
**See Attachment IV**

**18. CERTIFICATE**

*(This item must be completed by applicant)*

*The applicant and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.*

**WARNING.**—18 U.S.C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

a. LICENSE FEE REQUIRED <i>(See Section 170.31, 10 CFR 170)</i>  <b>\$230.00</b>	b. CERTIFYING OFFICIAL <i>(Signature)</i> 
	c. NAME <i>(Type or print)</i> <b>Craig D. DesChenes</b>
(1) LICENSE FEE CATEGORY: <b>New Materials License</b>	d. TITLE <b>Mechanical Engineer - Power Production</b>
(2) LICENSE FEE ENCLOSED: \$ <b>230.00</b>	e. DATE <b>4-3-89</b>

## ATTACHMENT I

Six (6) sources and twelve (12) receivers will be used to monitor fly-ash levels in twelve (12) hoppers of an electrostatic precipitator. The sources and receivers will be located 12 feet above the floor as shown in figure 1. A six-foot tall employee would not be closer than six-feet to the level device source during a round.

One (1) source and (1) receiver will be used to monitor the fly-ash level in one fly-ash collector silo. The source will be mounted on the south side of the silo 6 feet away from the nearest ladder and 10' 10" above the lower platform as indicated on figure 2. An employee could get as close as 1' 8" from the detector receiver on the north side of the ash silo. The operation of the silo will be intermittent: one or two shifts per week. Employees will not typically be in the area of the silo. Silo controls are located at ground level.

There are no severe environmental conditions that can effect the integrity of the source and shielding. All environmental factors have been presented to the manufacturer for evaluation prior to specifying these devices.

## ATTACHMENT II

### Personnel Monitoring Devices

No additional personnel monitoring devices need be utilized due to the presence of these gauging devices. The source holder(s) are designed such that radiation levels will be less than 5 mR/h one foot from any accessible surface at the maximum source loading for the device with the device in the OFF position. With the shutters open, a collimated beam of radiation exists between the source head and detector traversing the vessel being monitored. It is not likely, when consideration is given to the design of the device, the precautions to be taken itemized below and the minimal accessibility, that any individual will receive a radiation exposure in excess of 0.125 rem per calendar quarter.



### ATTACHMENT III

#### Radiation Protection Program

- a) Based upon working conditions and physical accessibility, we estimate that four (4) persons would routinely be as near as 6 feet to any of the precipitator device for 50 minutes per week per person (see figure 1). We estimate that one person would routinely be within 28 feet of the ash-silo per week.

Our personnel will be instructed as to the size and location of the beam, the radiation levels in the beam and will be cautioned that unless the shutter is CLOSED these radiation levels are significant. These devices have the capability of producing high level radiation between the source holder and the detector. However, the combination of:

- i. during normal operation no individual has access to the vessel. The contained material and operating parameters preclude the access of any major portion of the body to the radiation field. Only authorized personnel are allowed to change the operating parameters and/or authorize access;
- ii. personnel are instructed to CLOSE the gauge shutter when the operation is stopped and/or work must be done in any vessel being monitored;
- iii. if the operation is to be shut down for any extended period of time or extensive work is to be done on the vessel, the radiation safety officer will be notified to insure that the shutter is locked in the CLOSED position and remains locked during this period of time;
- iv. signs displaying "Caution Radiation" and the standard symbol stating that the shutter must be CLOSED and the radiation safety officer notified prior to entering the vessel being monitored will be posted at installation;
- v. the general inaccessibility of these devices, all devices used on the precipitator hoppers will be key interlocked with the hopper access doors to prevent access into the hoppers unless the source is isolated: shutter closed. The Ash Silo devices will not be equipped with a key interlock system, but signs and internal clearance procedures will prevent opening the hopper door unless the level devices are isolated.

should be sufficient to prevent unauthorized entry to the radiation beam and preclude any unintentional radiation exposure.

ATTACHMENT III

Radiation Protection Program (Cont.)

- b) Texas Nuclear personnel will perform the initial radiation survey and leak testing at the time of installation. Additionally, our personnel will receive specific training at the time of installation. This training will include construction features of the device, source integrity, beam geometry and intensity and operating details of the device. Any precautionary steps like the addition of shielding, signs, or precautions to be taken will be covered at the time in accordance with Texas Nuclear installation procedures and training.
- c) The source holders - Model 5197 - will be tested for source integrity at least once every three years. Leak testing will be performed by Texas Nuclear Procedure QT/1k.
- d)
  - i. In the event some catastrophic emergency occurs and these devices may be involved, we will notify Texas Nuclear and await further instructions.
  - ii. Any repair, relocation or removal of the source holders will be done by Texas Nuclear personnel.

ATTACHMENT IV

Formal Training in Radiation Safety

The manufacturer will furnish us with detailed instructions on the proper precautions to be taken in utilizing these devices. Specific and regulatory compliance will be presented by trained personnel of Texas Nuclear at the time these devices are installed. The persons named in items #6 & #7 have no current work experience with radiation and will receive required training from Texas Nuclear personnel.

MaterialsLicense-CD/pwp3/dah