RADIOGRAPHY LICENSE APPLICATION CHECKLIST

(NUREG-1556, Vol. 2 dated 8/98)

Licensee/Applicant: Alaska Industrial X-Ray, Inc.

License Number: 50-16084-01

Docket Number: 030-10346

Control Number: 467503

Date of Application: 9-13-99

Application Signed [✓] Yes [ ] No

REGULATORY PERFORMANCE:

[✓] Review of last three inspections reveals no **major regulatory considerations.**

DATE	INSPECTOR	VIOLATIONS
■ 7/16-17/97	Skov	- 3 month equip. maintenance - labels on devices — label on overpack
■ 7/17/96	Leonardi	No Vio
■ 8/1-2/95	Garcia	- incomplete O+G procedures — shipping papers - un checked pocket dosimeter

1 Amersham 660B
2 Inc IR-100
3 Gamma Cont. - storage

[ ] Major violations/repeat violations:

[ ] Reviewer and inspector concerns:

1. LICENSE ACTION TYPE:

( ) NEW ( ) RENEWAL (✓) AMENDMENT

2. NAME AND MAILING ADDRESS:

Name: Alaska Industrial X-Ray, Inc.

Mailing Address: 4047 Kingston Drive
Anchorage, AK 99504-4438

3. PLACE(S) OF USE AND STORAGE:

8861 Golovin Street

(✓) Permanent Radiographic Installation Address: Anchorage, AK

( ) Locations outside of the installation where radiographic operations will be conducted

( ) Field Station Address:

(✓) Temporary Job Sites

(✓) Notification to NRC regional office prior to radiographic operations exceeding 180 days at temporary job site

On file: 790 A Ocean Dock Rd & 100th Ave. + King St., Anchorage

4. INDIVIDUAL TO CONTACT CONCERNING THE APPLICATION:

Name: Peter A. Millar

Telephone No.: 907-344-4061

5. MATERIAL TO BE POSSESSED:

Amersham 650 & IN7 not an approved combo.

RADIOGRAPHY EQUIPMENT

Radionuclide	Manufacturer (or Distributor) & Model Nos. (Sealed Sources) (120 Ci)	Manufacturer (or Distributor) & Model Nos. (Exposure Devices) Indicate if device used in permanent radiographic installation only (Y) (N)	Manufacturer (or Distributor) & Model Nos. (Source Changers)	Depleted uranium (DU) used as shielding material (Y) (N) Specify total amount (in kilograms)
Ir-192	Amersham A424/9	Amersham 660 System	Amersham 650	DU
	INC 7 (100 Ci)			DU } 999 Kg
Ir-192	INC 32 (120 Ci)	INC IR-100	INC IR-50	DU

INC 130 source changer & INC 32 not an approved combo

Can't locate a SSDR sheet for this device

NON-RADIOGRAPHY EQUIPMENT			
Radionuclide	**Manufacturer (or Distributor) & Model Nos. (Sealed Sources)**	**Manufacturer (or Distributor) & Model Nos. (Devices)**	**Maximum possession limit per source (in millicuries); total possession limit (in millicuries)**
Co-137	[redacted]	Model Victoreen Ro-20 Multi-dose Calibrator	10 mCi (?)

Item No.	Title and Criteria	Yes	Description Attached
5.	**RADIOACTIVE MATERIAL** **Sealed Sources and Devices** • Confirm that each sealed source, device, and source/device combination possessed is registered as an approved sealed source or device by NRC or an Agreement State and will be possessed and used in accordance with the conditions specified in the registration certificate. • Confirm that associated equipment is compatible with the exposure devices, source exchangers, and sealed sources containing byproduct material. • Confirm that only radiographic exposure devices, source assemblies or sealed sources, and associated equipment which meet the requirements specified in 10 CFR 34.20 will be used in radiographic operations.	[ ] [ ] [ ]	

Item No.	Title and Criteria	Yes	Description Attached
5.	**RADIOACTIVE MATERIAL** **Financial Assurance and Recordkeeping for Decommissioning** • Pursuant to 10 CFR 30.35(g), we shall maintain drawings and records important to decommissioning and to transfer these records to a new licensee before licensed activities are transferred, or to assign the records to the appropriate NRC regional office before the license is terminated. **OR** • If financial assurance is required, submit evidence.	[ ]	[ ]
6.	**PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED** Equipment will only be used: - industrial radiography - underwater radiography - lay-barge radiography - off-shore platform radiography - other than radiography	[✓] [ ] [ ] [ ] [ ]	

Item No.	Title and Criteria	Yes	Description Attached
7.	**INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE** **Radiation Safety Officer (RSO)**		
	• The name of the proposed RSO and other potential designees who will be responsible for ensuring that the licensee's radiation safety program is implemented in accordance with approved procedures. (RSO since 1975 - On current lic.)		[ ]
	Name: Peter A. Millar B.S. in Metallurgical Eng.		[ ]
	AND		
	• Demonstrate that the RSO has sufficient independence and direct communication with responsible management officials by providing a copy of an organization chart by position, demonstrating day-to-day oversight of the radiation safety activities.		[ ]
	AND EITHER		
	• The specific training and experience of the RSO and other potential designees. Include the specific dates of certification and/or training in radiation safety.		[ ]
	• Documentation to show that the RSO has a minimum of 2,000 hours of hands-on experience as a qualified radiographer in industrial radiographic operations.		[ ]
	• Documentation to show that the RSO has obtained formal training in the establishment and maintenance of a radiation protection program.		[ ]
	OR		
	• Alternative information demonstrating that the proposed RSO is qualified by training and experience.		[ ]
	• Documentation to show the RSO has obtained formal training in the establishment and maintenance of a radiation protection program.		[ ]

Certification?

no indication of certification requirement 10 CFR 34.43(a)

Item No.	Title and Criteria	Yes	Description Attached
8.	**TRAINING FOR RADIOGRAPHERS AND RADIOGRAPHER 'S ASSISTANTS** Rad Safety Manual Part C-0		
	• Submit an outline of the training to be given to prospective radiographer's assistants. Submit your procedures for experienced radiographers who have worked for another licensee.		[1]
	• Provide a copy of a typical examination and the correct answers to the examination questions. Indicate the passing grade.		[ ]
	• Prior to June 27, 1999, you may **affirm** that all individuals acting as radiographers will be certified in radiation safety in lieu of providing a description of your training and examination program in the topics listed in 10 CFR 34.43(g). (All other training program descriptions must still be submitted.)	[ ]	
	• Specify the qualifications of your instructors in radiation safety principles and describe their experience with radiography. If training will be conducted by someone outside the applicant's organization, identify the course by title and provide the name and address of the company providing the training. RSO		[1]
	• Describe the field (practical) examination that will be given to prospective radiographers and radiographer's assistants.		[1]
	• Describe the annual refresher training program, including topics to be covered and how the training will be conducted.		[ ]
	• Submit your procedures for verifying and documenting the certification status of radiographers and for verifying that their certification remains valid.		[ ]
	• Submit a description of your program for inspecting the job performance of each radiographer and radiographers' assistant at intervals not to exceed 6 months as described in 10 CFR 34.43(e).		[1] RSM JB

Alaska Petroleum Contractor
400 E. 100th Ave. + King St.

Item No.	Title and Criteria	Yes	Description Attached
9.	**FACILITIES AND EQUIPMENT** **Permanent Radiography Installations** Provide the following information for each permanent radiography installation:		
	• An annotated sketch or drawing of the facility and its surroundings.		[✓]
	• The scale to which the sketch or drawing is made.		[✓]
	• The type, thickness and density of shielding materials on all sides, including the floor and the roof.		[ ]
	• The locations of entrance ways and other points of access to the facility. not clear		[ ]
	• A description of the areas adjacent to the facility and the distance to these areas. Include information on areas adjacent to, above, and below the facility.		[✓]
	• A description of the general location of each proposed permanent facility listed in Item 3 (e.g., located in an industrial park, an office complex, etc.) and its current use.		[✓]
	• If a proposed permanent facility is a private residence, provide diagrams of the facility that include the building, the proposed restricted area(s), and adjacent areas, including above and below the restricted areas.		[ ] N/A
	• Restricted areas do not include residential quarters.	[✓]	
	• Explain how radiation levels in unrestricted areas will be maintained at less than 1 mSv (100 millirem) per year.		[ ]
	• A description of the visible-audible signal system or entrance control system and its locations.		[✓]
	• The results of radiation-level calculations or actual radiation measurements adjacent to, above, and below the facility.		[ ]

Item No.	Title and Criteria	Yes	Description Attached
9.	**FACILITIES AND EQUIPMENT** **Permanent Radiography Installations** Provide the following information to obtain approval for a variance if construction requirements preclude shielding the roof to meet the requirement not to exceed 0.02 mSv (2 mrem) in any one hour: • Means of access to the roof. • Procedures for ensuring that no individual is on the roof or could gain access to the roof during radiography. • A commitment that the roof will be posted with "Caution (or Danger) Radiation Area" sign(s). • Steps taken to minimize radiation on the roof. • Limitations (if needed) on positioning of sources or type (isotope) and amount of radioactive material that may be used in the installation to ensure that areas adjacent to, above, and below the installation will be unrestricted areas during the performance of radiography.	[ ]	[ ] [ ] [ ] [ ] [ ] [ ]
	Provide the following information to obtain approval for a variance if radiation levels on the radiography installation roof exceed 1.0 mSv (100 mrem) in any one hour: • A commitment that the roof will be posted with "Caution (or Danger) High Radiation Area" sign(s). • Evidence of constant surveillance of the roof by closed-circuit TV. • Fluctuation of the dose rate. • A description of a control device that would automatically reduce the radiation level to 1 mSv (100 mrem) in any one hour at 30 cm from the radiation source if someone enters the roof. • A description of a control device that activates a visible-audible signal so that both an individual entering the roof and the radiographer on duty are made aware of the entry.	[ ]	 [ ] [ ] [ ] [ ]

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9.	**FACILITIES AND EQUIPMENT** **Field Stations** Provide the following information for each field station: • Describe the storage location(s) at the address(es) listed in Item 3 of the application and submit a diagram showing where the radiography camera will be stored at the field stations. • Indicate whether radiography will be performed at the place of business outside of a permanent facility as if the work was "in the field." • For radiography performed at the place of business as if the work was "in the field," provide a diagram of the location where radiography may be performed and its surroundings, including a description of adjacent property.	[ ]	[ ] [ ]
10.	**RADIATION SAFETY PROGRAM** **Audit Program** The applicant is not required to, and should not, submit its audit program to the NRC for review during the licensing phase.	**Need Not Be Submitted With Application**	

Item No.	Title and Criteria	Yes	Description Attached
10.	**Instruments** We will possess and use calibrated and operable radiation survey meters. Calibration will be performed by a NRC or Agreement State licensee specifically authorized to perform instrument calibration. Calibration is to be performed in-house and the model procedures in Appendix J will be followed. Calibration is to be performed in-house and alternate procedures will be followed. Identify the qualifications of the individuals who will perform the calibrations.	[1] [1] [ ]	INC [ ] [ ]
10.	**RADIATION SAFETY PROGRAM** **Material Receipt and Accountability** Physical inventories will be conducted and documented at quarterly intervals (not to exceed 3 months) to account for all sealed sources containing byproduct material and devices containing depleted uranium received and possessed under the license.	[1]	PA RSO Response 6.1.7
	Minimization of Contamination The applicant is *not* required to provide a response to the minimization of contamination if the applicant's responses meet the criteria for the following sections: "Radioactive Material - Sealed Sources and Devices," "Facilities and Equipment," "Radiation Safety Program - Leak Tests," "Radiation Safety Program - Operating and Emergency Procedures," and "Waste Management - Sealed Source/DU Device Transfer and Disposal."	**Need Not Be Submitted With Application**	

Item No.	Title and Criteria	Yes	Description Attached
10.	**RADIATION SAFETY PROGRAM** 6mo (12A) **Leak Tests** Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services to other licensees; or by using a leak test kit supplied by an organization licensed by NRC or an Agreement State to provide leak test kits and/or services to other licensees and according to the instructions provided in the leak test kit. **OR** Leak testing will be done by the applicant. • The information in Appendix K supporting a request to perform leak testing and sample analysis is attached. • We will follow the model procedures in Appendix K. • We will follow alternate procedures.	[✓] [ ] [ ]	[ ]

Item No.	Title and Criteria	Yes	Description Attached
10.	**Occupational Dosimetry** Film or TLD dosimetry, processed and evaluated by a NVLAP-accredited processor and exchanged at the required frequency, will be worn by radiography personnel. The required personnel monitoring equipment, including 0 to 2 mSv (200 mrem) dosimeters or electronic personal dosimeters, will be worn by radiographic personnel. Alarming rate meters set to alarm @ ± 20% of 500 mrem/hour will be worn by all radiography personnel except those at permanent radiography installations where other appropriate alarming or warning devices are in use. Pocket dosimeters and alarm rate meters will be checked for correct response at periods not to exceed 12 months. • If adjustment is necessary, the devices will be returned to the manufacturer. • If adjustment is necessary, in-house procedures for adjustments are described.	[Y] [Y] [Y] see 34.49 (g)(2) [Y] Calibrated every 6 months [ ] [ ]	[ ]
10.	**RADIATION SAFETY PROGRAM** **Public Dose** The applicant is not required to, and should not, submit a response to the public dose section during the licensing phase. This matter will be inspected during an inspection.	**Need Not Be Submitted With Application**	

required by RSO

Item No.	Title and Criteria	Yes	Description Attached
10.	**Quarterly Maintenance** Submit the procedures to NRC for review and approval as Operating and Emergency Procedures and/or as Shipping Package Procedures as needed. Before using a new sealed source/device combination, we will have written inspection and maintenance procedures that address the use of the new equipment as a Type B transport package. In addition, we will provide training to radiographic personnel before using a new sealed source/device combination.	[ ]	[X] 15B
10.	**Operating and Emergency Procedures** **Handling and Use of Sealed Sources and Radiography Exposure Devices** Submit operating and emergency procedures which provide step-by-step instructions for using each type of radiographic device. Instructions for crank out devices should be separate from those for pipeliner devices. Submit operating and emergency procedures which provide instructions for performing source exchanges.		[X] [X] 19B
10.	**Methods and Occasions for Conducting Radiation Surveys** Submit operating and emergency procedures which, where applicable, include each of the surveys included in Table 8.1		[X]
10.	**Operating and Emergency Procedures** **Methods for Controlling Access to Radiographic Areas** Submit the procedures to control access to radiographic operations and storage areas.		RSM pg 4B [X]

Item No.	Title and Criteria	Yes	Description Attached
10.	**Methods and Occasions for Locking and Securing Radiographic Exposure Devices, Storage Containers, and Sealed Sources** Submit operating and emergency procedures that include procedures for locking and securing radiographic equipment.		RSM pg 2B [✓]
10.	**Personnel Monitoring and the Use of Personnel Monitoring Equipment** Submit operating procedures that include instructions for proper use of personnel monitoring equipment.		[✓]
10.	**Transporting Sealed Sources to Field Locations, Securing Exposure Devices and Storage Containers in Vehicles, Posting Vehicles, and Controlling Sealed Sources During Transportation** Submit operating and emergency procedures for transporting sealed sources containing byproduct material, exposure devices, and source exchangers.		RSM 3B [✓] pg
10.	**Daily Inspection and Maintenance of Radiographic Equipment** Submit operating and emergency procedures for daily inspection and maintenance of radiographic equipment.		DA [✓]
10.	**Operating and Emergency Procedures** **Rate Meter Alarms or Off-scale Dosimeter Readings** Submit operating and emergency procedures to address rate meter alarms or off-scale dosimeters.		[ ]

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Item No.	Title and Criteria	Yes	Description Attached
10.	**Procedure for Identifying and Reporting Defects and Non-compliance as Required by 10 Cfr Part 21** Submit operating and emergency procedures for notifying management of equipment malfunction or defect.		[✓]
10.	**Notification of Proper Persons in the Event of an Accident** Submit operating and emergency procedures that include appropriate instructions for notifying the RSO and/or other personnel in the event of an emergency.		[✓]
10.	**Minimizing Exposure of Persons in the Event of an Accident--Emergency Procedures** Submit operating and emergency procedures that include instructions for minimizing exposure of persons in the event of an accident.		[✓]
10.	**Source Retrieval** (loss of source ?) We will not perform source retrievals and will use the services of a person specifically licensed by the NRC or an Agreement State to perform the retrievals of our sources. Submit operating and emergency procedures that include instructions for source retrieval procedures and specific training.	[ ] [ ]
10.	**Operating and Emergency Procedures** **Maintenance of Records** Submit operating and emergency procedures which ensure proper maintenance of records.		[✓]

Item No.	Title and Criteria	Yes	Description Attached
11.	**WASTE MANAGEMENT** **Disposal or Transfer of Radiography Sealed Sources Containing Byproduct Material or Devices Containing Depleted Uranium** The applicant does not need to provide a response to this item during the licensing process. However, the applicant should establish and include waste disposal procedures in its radiation safety program.	**Need Not Be Submitted With Application**	