



CHAPARRAL STEEL

25801 Hofheimer Way • Petersburg, VA 23803 • 804.520.0286 • www.chaparralsteel.com

February 26, 1999

Mr. Jay L. Henson
U.S. Nuclear Regulatory Commission, Region II
Atlanta Federal Center
61 Forsyth Street, S.W., Suite 23T85
Atlanta, Georgia 30303-3415

48-25463-01
030-34928

Subject: Request for Additional Information
Mail Control No. 258232

Dear Mr. Henson:

This letter is in response to your February 17, 1999 letter requesting additional information for our radioactive material license application (Mail Control No. 258232).

The following information is provided in response to Items A through K in your letter:

- A. We will be receiving five mold level gauges from EG&G Berthold, Oak Ridge, Tennessee, Device Model No. LB 300 IRL/ML Type II Series with registration number TN-1031-D-109-S. This is the gauge found in the NRC's SS&D Registry.
- B. Before obtaining licensed materials, the proposed RSO will have successfully completed the training described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in "Consolidated Guidance about Materials Licenses - Program-Specific Guidance about Fixed Gauge Licenses," NUREG-1556, Vol. 4, dated October 1998. Before being named as the RSO, future RSOs will have successfully completed the training described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience - Radiation Safety Officer" in NUREG-1556, Vol. 4, dated October 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our license.
- C. Before using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled "Authorized Users" in NUREG-1556, Vol. 4, dated October 1998. Authorized users will be trained to perform installation,

NMSS/RGNI MATERIALS-002

removal and relocation of the gauges. The training will consist of classroom and hands-on instruction with step-by-step procedures as recommended by the device manufacturer. (See two pages of manufacturer's procedures attached.) The gauge manufacturer, distributor or other person authorized by NRC or an Agreement State will perform non-routine operations such as initial installation, initial radiation survey, repair and maintenance of components related to the radiological safety of the gauge, disposal of sealed sources and removal of a gauge from service.

- D. We will ensure that the location of each fixed gauge meets the criteria in the section entitled "Facilities and Equipment" in NUREG-1556, Vol. 4, dated October 1998.
- E. We will use survey instruments that meet the Criteria in the section entitled "Radiation Safety Program – Instruments" in NUREG-1556, Vol. 4, dated October 1998. Each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations.
- F. Physical inventories will be conducted at least every 6 months or at other intervals approved by the NRC, to account for all sealed sources and devices received and possessed under the license.
- G. We will perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will provide dosimetry that meets the Criteria in the section entitled "Radiation Safety Program – Occupational Dosimetry" in NUREG-1556, Vol. 4, dated October 1998.

The prospective evaluation has been performed using the method in Appendix J of NUREG-1556, Vol. 4, dated October 1998. This evaluation is based on the following data:

A.	Time needed to perform the entire routine maintenance procedure	1 min/procedure
B.	Expected whole body dose rate received by the individual, determined using exposure rates measured on contact with the gauge while the sealed source is in the shielded position	3.3 mrem/hr
C.	Time the hands were exposed to the shielded source	1 min/procedure
D.	Expected extremity dose rate received by the individual, determined using measured or manufacturer-provided data for the shielded source at the typical distance from the hands to the shielded source	32 mrem/hr
E.	Number of routine maintenance procedures per year (1 procedure/week per strand and 5 strands)	260 procedures/year

Expected whole body dose = $A \times 1 \text{ hr}/60 \text{ min} \times B \times E = 14 \text{ mrem/yr}$
Expected whole body dose less than 500 mrem/yr requires no dosimetry

Expected extremity dose = $C \times 1 \text{ hr}/60 \text{ min} \times D \times E = 140 \text{ mrem/yr}$
Expected extremity dose less than 5000 mrem/yr requires no dosimetry

- H. Operating and emergency procedures will be developed, implemented, maintained, and distributed, and will meet the Criteria in the section entitled "Radiation Safety Program – Operating and Emergency Procedures" in NUREG-1556, Vol. 4, dated October 1998.
- I. Leak tests will be performed no less frequently than at intervals approved by the NRC or an Agreement State and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by Chaparral Steel personnel using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions. Alternately, leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services to other licensees. Records of leak test results will be maintained as required.
- J. We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's or distributor's written recommendations and instructions. As noted in Item C above, authorized users will be trained to perform installation, removal and relocation of the gauges. The training will consist of classroom and hands-on instruction with step-by-step procedures as recommended by the device manufacturer. (See two pages of manufacturer's procedures attached.) The gauge manufacturer, distributor or other person authorized by NRC or an Agreement State will perform non-routine operations such as initial installation, initial radiation survey, repair and maintenance of components related to the radiological safety of the gauge, disposal of sealed sources and removal of a gauge from service.
- K. Chaparral Steel acknowledges management's commitment and responsibilities for the radiation protection program. A revised NRC Form 313 is attached with the certification statement signed by Mr. Louis Colatriano, Vice President.

In addition to the above, I request that our material license reflect a new address and telephone number because we have just moved into a new office building. The address is now:

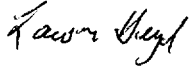
Chaparral Steel
25801 Hofheimer Way
Petersburg, VA 23803
Telephone: 804-524-2829

This information is shown on the attached NRC Form 313.

Mr. Jay L. Henson
February 26, 1999
Page 4

Please contact me if you have any questions regarding this application. Thank you for your attention to this matter.

Sincerely,



Lawrence Heyd
Radiation Safety Officer

Attachments: Sample Procedures
Revised NRC Form 313

cc: Vic Remeika
Darrell Roberts
John Matschner, Jendco Corporation

2. Shieldings for Insertion Rod Source

Certain mould constructions require that the rod source be installed in a protection tube inside the water jacket or even directly in the copper plates of the moulds. The advantage of this arrangement is that the mould level system can be installed under problematic space conditions, caused, for example, by the installation of a EMS stirrer coil. Another advantage is that this arrangement requires only a very low source activity.

The storage of the rod source and the insertion in the mould is carried out by means of a special shielding with shutter device and extension rod, as illustrated in the sketch and also in drawing 21256.000.

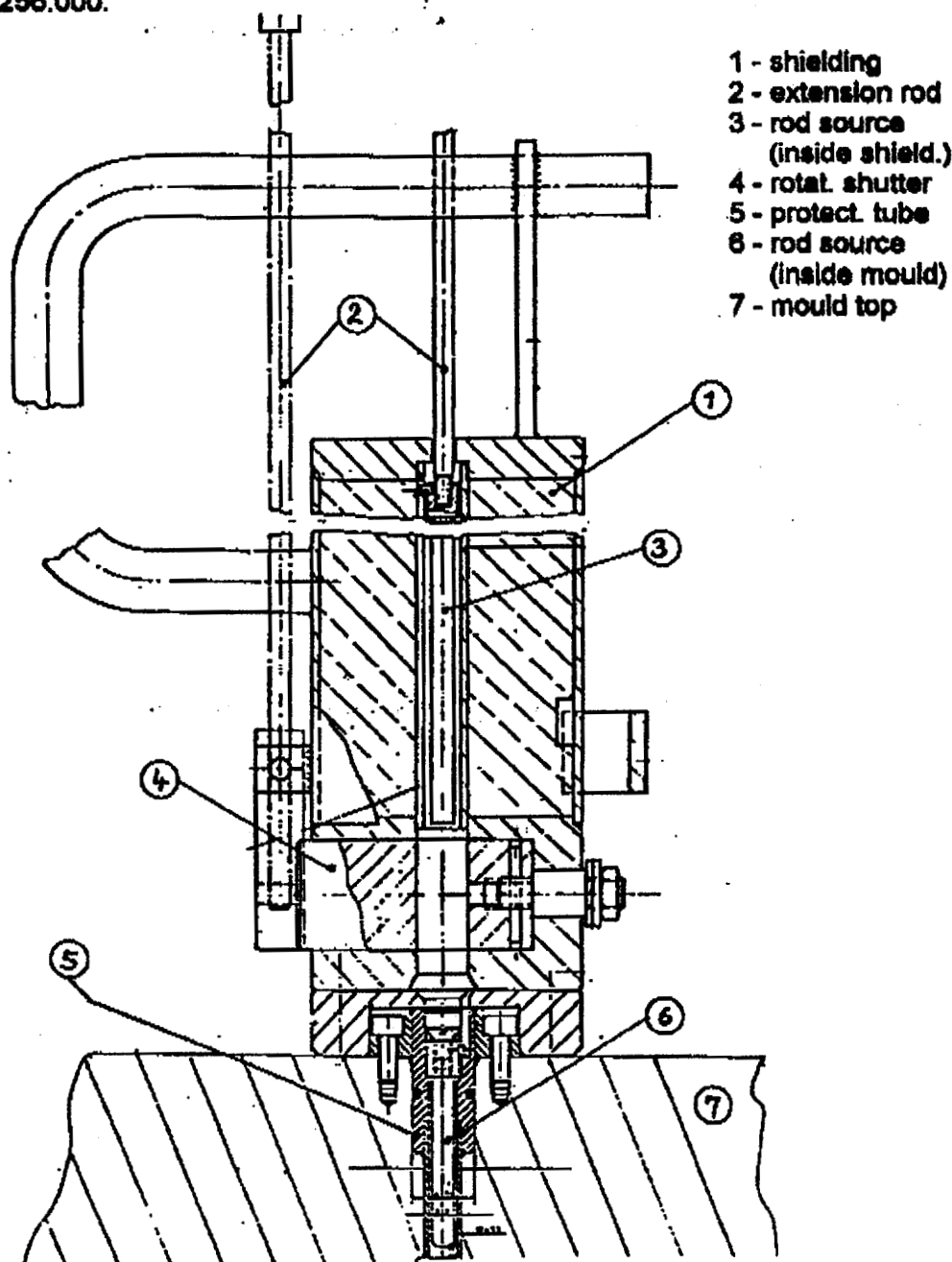


Fig. 10: Shielding for Insertion Rod Source

NOTE:

The rod source must be assembled or disassembled in the mould by personnel who are well familiar with the mould construction as well as the function of the shielding and have been trained in its operation and informed on the radiation protection guidelines.

Inside the mould there must be a special source holder or protection tube (part 5 in fig. 10) which fix the source and hold the source in place. A slot in this holder is necessary to screw or unscrew the extension rod (part 2 in fig. 10).

Please observe the following steps for insertion of a source:

1. Place the shielding with the source close to the mould.
2. Open the mould cover as much as necessary and provide access to the protection pipe for the source and the intended position of the shielding; clean it, if necessary.
3. Position and align the shielding above the protection pipe.
4. Take the extension rod out of the holder and screw it into the head of the rod source from above inside the shielding.
5. Open the shutter of the shielding and carefully insert the rod source into the protection pipe inside the mould using the extension rod.
6. Make sure that the rod source is completely inside the protection pipe and the spigot of the rotation safety device on the source head engages in the provided groove in the head of the protection pipe.
7. Unscrew the extension rod from the rod source and pull it out of the shielding from above.
8. Carefully lift off the shielding from the mould and check if the source is in the proper position.
9. Close the mould head as intended (e.g. by a screw or cover sheet) to secure and protect the source in this position.

The source is dismantled in reverse order. Please make sure to secure the shutter of the shielding by a lock and to store the shielding with source in a place provided for this purpose.

Important:

If you detect any problems when installing the rod source caused, for example, by inaccurate alignment or damage to the protection pipe, immediately place the source back into the shielding, close the shutter and secure it with the available lock. Then check the situation at the mould thoroughly and try to get rid of the cause of the problem.