

August 17, 2007

Mr. E. W. Huddleston  
President  
Industrial Nuclear Co., Inc.  
14320 Wicks Blvd.  
San Leandro, CA 94577

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9185 FOR THE MODEL NO. OP-100  
PACKAGE

Dear Mr. Huddleston:

As requested by your application dated March 22, 2007, supplemented on July 12, 2007, enclosed is Certificate of Compliance No. 9185, for the Model No. OP-100 package. Changes made to the enclosed certificate are indicated by vertical lines in the margin. The staff's Safety Evaluation Report is also enclosed.

Those on the attached list have been registered as users of the package under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471. The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of 49 CFR 173.471.

If you have any questions regarding this certificate, please contact me or Jessica Glenny of my staff at (301) 492-3285.

Sincerely,

**/RA/**

Robert A. Nelson, Chief  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9185  
TAC No. L24074

Enclosures: 1. Certificate of Compliance  
No. 9185, Rev. No. 7  
2. Safety Evaluation Report  
3. Registered Users

cc w/encl 1 & 2: R. Boyle, Department of Transportation  
J. Shuler, Department of Energy

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<b>DATE:</b>	8/9/2007		8/10/2007	8/14/2007	8/17/2007	8/17/2007		

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August 17, 2007

## SAFETY EVALUATION REPORT

Docket No. 71-9185  
Model No. OP-100 Package  
Certificate of Compliance No. 9185  
Revision No. 7

### SUMMARY

By application dated March 22, 2007, supplemented on July 12, 2007, Industrial Nuclear Co., Inc. (INC) submitted an amendment request for Certificate of Compliance No. 9185, for the Model No. OP-100 package. INC requested an amendment for approval of a "-96" designation in the package identification number. Additionally, INC also requested maximum weight increases for the IR-50 source changer, the IR-100 exposure device, and the Model No. OP-100 package.

### EVALUATION

By application dated March 22, 2007, INC requested approval for a "-96" designation for the OP-100 package. Changes to the package design are not required in order to meet the provisions for a "-96" designation. None of the changes indicated for a "-96" designation are applicable to the OP-100 package. The package identification number has been revised to USA/9185/B(U)-96 to indicate that the package meets the requirements of the revised 10 CFR Part 71 regulations which became effective October 1, 2004 (69 FR 3698).

INC requested an amendment to increase the maximum weights for the IR-50 source changer, the IR-100 exposure device, and the Model No. OP-100 package to 55, 53, and 77 lbs, respectively. Full scale certification tests were performed for the Model No. OP-100 with either the IR-50 source changer or the IR-100 exposure device payload. The Model No. OP-100 satisfies the requirements for normal conditions of transport and hypothetical accident conditions of 10 CFR Part 71. The margin of safety in all tests was more than adequate. The additional increase of 2 lbs for the IR-50 source changer, 3 lbs for the IR-100 exposure device, and 2 lbs for the Model No. OP-100, will not meaningfully affect the safety margins reported in the application. The requested changes were incorporated into updated revisions of Drawing Nos. OP 100-1, IR 50-1A, and IR 100-1A. Based on the statements and representations in the application, the staff concludes that the requested weight increases for the IR-50 source changer, the IR-100 exposure device and the Model No. OP-100 package will not affect the ability of the package to meet the requirements of 10 CFR Part 71.

The staff identified the Model No. OP-100, which consists of either an IR-50 source changer or an IR-100 exposure device within an overpack, as one of several drum type packages that may potentially have problems with lid separation during hypothetical accident conditions. The drum lid could become separated when dropped with CG-over the closure ring bolt, at a shallow angle to horizontal. The staff reviewed the lid separation issue to determine if it would have a significant impact on the safety performance of the package. In a previous application from

INC, dated September 10, 1998 (ML030020470), the applicant performed the 9-meter drop tests in various orientations on two Model No. OP-100 packages containing a Model No. IR-50 source changer and two Model No. OP-100 packages containing a Model No. IR-100 exposure device. After the 9-meter drop tests, the applicant performed the puncture tests on each of the certification test units. These combined free drop and puncture drop tests did not result in a complete separation of the Model No. OP-100 lid from the drum body. The NRC previously reviewed the applicant's evaluation and agreed with their conclusion in a letter dated November 19, 1998 (Accession No. ML030020359), that the results of the tests confirmed that the Model No. OP-100 package met the performance standards of 10 CFR Part 71. The staff concludes that the Model No. OP-100 package would meet the performance standards of 10 CFR Part 71, even if the drum lid became separated under the drop test specified in 10 CFR 71.73(c)(1).

Condition No. 9 of the certificate clarifies that the package is approved for use under the general license provisions of 10 CFR 71.17. This change is due to a revision in the renumbering of certain sections in 10 CFR Part 71 regulations which became effective on October 1, 2004 (69 FR 3698). The certificate was also revised to include Condition No. 10, which authorizes the use of the previous revision of the certificate for a period of approximately 1 year.

#### CONCLUSION

As requested by the applicant the package identification number has been revised to include the "-96" designation. The Certificate of Compliance has also been revised to include the amendments requested by the applicant. The changes indicated in the amendment request do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9185, Revision No. 7 on  
August 17, 2007.