



Rockwell International  
Atomsics International Division

### SUPPORTING DOCUMENT

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R. L. Jaseph 754 KB44

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D. N. Glass 2-24-78  
R. J. McDermott 2/28/78  
M. E. Remley 2/28/78

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DISTRIBUTION

ABSTRACT

*	NAME	MAIL ADDR
*	M. T. A. Gentry	KA06
	D. N. Glass	KB45
	J. M. Harris	T034
	P. F. Higgins	KB45
	C. F. Hof	KB06
	R. L. Jaseph	KB44
	D. F. Kelly	KB45
	R. J. McDermott	KB44
	K. D. Miller	JB02
	M. E. Remley	NB08
	V. J. Schaubert	NB10
	J. H. Shiverdecker	JB02
	R. J. Tuttle	NB13
	B. F. Ureda	NB02
	J. H. Walter	T009
*	M. S. Wright	T030

Title 10, Code of Federal Regulations, Part 71, (10 CFR 71) requires entities licensed to handle special nuclear material by the Nuclear Regulatory Commission (NRC) to establish and maintain a quality assurance program for the design, fabrication, assembly, testing, use, and maintenance of each packaging of quantities of licensed material in excess of type A quantities for shipment. This document describes that program for Atomics International

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1.0 INTRODUCTION

Effective October 18, 1977, the Nuclear Regulatory Commission (NRC) amended its regulations for packaging and transport of radioactive material. These amendments, published as changes to CFR Part 71, upgrade requirements for quality assurance in the design, fabrication, assembly, testing, use, and maintenance of packagings for shipping and transporting licensed radioactive material. In general, the upgrading consists of applying the eighteen criteria of 10CFR50 Appendix B to the packaging of radioactive material; the criteria are published as 10CFR 71 Appendix E.

2.0 SCOPE

This QA Program applies to all organizations and personnel who perform activities affecting the safety-related functions associated with designing, fabricating, maintaining, and using packages for licensed radioactive material. It does not apply to packages used only for on-site shipments (i. e., where the vehicle never leaves AI or government-owned land), to license-exempt activities (e. g., where AI has a GOCO (Government Owned Contractor Operated) contract with Department of Energy (DOE)), or to shipments in government-owned, government-escorted vehicles.

3.0 APPLICATION

In determining how to apply the requirements of this program to a particular activity, responsible management shall consider:

- 1) The importance of malfunction or failure of the item to safety;
- 2) The design or fabrication complexity or uniqueness of the item;
- 3) The need for special controls or surveillance over processes and equipment;
- 4) The degree to which functional compliance can be demonstrated by inspection or test; and
- 5) The quality history and degree of standardization of the item.

Any change to design documents that changes conditions specified in the NRC approval of a package or container must also be approved by NRC.

When AI purchases materials or services, measures to assure adequate quality shall be included in the procurement documents. Subtier contractors shall be required to provide quality assurance programs to the extent necessary to assure adequate quality. The degree to which QA requirements are passed down to subtier suppliers shall specifically be considered by Engineering and QA personnel during P.O. initiation and review.

The documents listed in Section 4, following, as implementing procedures for this QA program are the procedures of the following AI or departmental manuals. In every case, the latest revision of any procedure referenced must be used.

- SOP Standard Operating Policies
- EMP Engineering Management Procedures Manual
- QAOP Quality Assurance Operating Procedures, Quality Assurance Manual
- MM Manufacturing Manual
- HSP Health and Safety Manual
- CMP Corporate Material Procedures

4.0 QUALITY ASSURANCE PROGRAM

10CFR71

Appendix E

Requirement

AI Implementing Document

Number

Title

		Number	Title
4.1	Organization	SOP M-78	AI Quality Assurance Program
4.2	QA Program	SOP M-78	AI Quality Assurance Program
		SOP N-52	Quality Program Audits
		EMP 3-19	Process Specifications
		EMP 3-47	Material Processing Specifications
4.3	Design Control	SOP M-10	Program Management
		SOP M-48	Corrective Action System
		EMP 2-8	Engineering Studies
		EMP 2-9	Design and Acceptance Criteria
		EMP 3-9	Preparation and Control of Specifications
		EMP 3-22	Interface Control
		EMP 4-1	Test Engineering Process
		EMP 5-3	Design Reviews
		EMP 5-17	Checking of Engineering Drawings
		EMP 5-24	Application of Standards

10CFR71 Appendix E Requirement		AI Implementing Document	
		Number	Title
4.4	Procurement Document Control	SOP J-12	Preparation and Processing of the Purchase Requisition
		QAOP N4.00	Procurement Document Review
		QAOP N4.01	Supplier Evaluation and Approval
		QAOP N4.02	Procurement of QA Planning
4.5	Instructions, Procedures, and Drawings	EMP 3-1	Engineering Documentation Process
		EMP 3-9	Preparation and Control of Specifications
		QAOP N5.01	Manufacturing Production Order / Operation Record
		QAOP N7.00	Product Acceptance Tests
4.6	Document Control	EMP 3-5	Drawing Preparation - Standard Release System
		EMP 3-9	Preparation and Control of Specifications
		EMP 3-21	Engineering Change Control
		EMP 3-46	Document Release and Control Systems
		EMP 3-52	Engineering Release Plan of Action
		EMP 5-17	Checking of Engineering Drawings
		SOP K-14	Shipping Radioactive Materials
		QAOP N2.02	Document Review
		QAOP N5.01	Manufacturing Production Order / Operation Record
		4.7	Control of Purchased Material, Equipment, and Services
SOP N-52	QA Program Audits		
QAOP N1.22	QA Acceptance Procedures		
QAOP N4.01	Supplier Evaluation and Approval		
QAOP N4.02	Procurement QA Planning		
QAOP N4.03	Procurement QA - Source Inspection		
QAOP N4.04	Procurement QA - Receiving Inspection		
QAOP N9.00	Stamp Control		

10CFR71 Appendix E Requirement		AI Implementing Document	
		Number	Title
4.8	Identification and Control of Materials, Parts, and Components	SOP J-58	Receiving and Inspection of Incoming Material and Equipment
		SOP J-59	Warehousing of Direct-Charged Purchased Materials by Traffic and Warehousing
		QAOP N4.02	Procurement QA Planning
		QAOP N5.01	Manufacturing Production Order
		QAOP N6.04	Welding Material Control
		QAOP N9.02	Specification of Hardware
		QAOP N10.00	Nonconforming Material, Parts, and Components
4.9	Control of Special Processes	QAOP N6.01	Qualification of Welding Procedures and Personnel
		QAOP N6.02	Qualification and Certification of Nondestructive Testing Personnel
		QAOP N6.03	Nondestructive Examination Procedures
		QAOP N6.04	Weld Material Control
		QAOP N6.05	Control of Special Processes
4.10	Inspection  (This section addresses inspection of production, not of procurements. Those are covered in Section 4.7)	QAOP N1.21	QA Plans
		QAOP N1.22	QA Acceptance Procedures
		QAOP N5.01	Manufacturing Production Order
		QAOP N6.03	Nondestructive Examination Procedures
		QAOP N6.05	Qualification of Special Processes
		QAOP N7.00	Product Acceptance Tests
		QAOP N7.01	Proof Pressure Testing of Pressure Vessels
		QAOP N9.00	Issuance, Use, and Control of Stamps

10CFR71 Appendix E		AI Implementing Document	
Requirement	Number	Title	
4. 11 Test Control	EMP 4-1	Test Engineering Process	
	EMP 4-3	Test Plans	
	EMP 4-4	Test Procedures	
	EMP 4-5	Test Reports	
	QAOP N1.22	QA Acceptance Procedures	
	QAOP N7.00	Product Acceptance Tests	
4. 12 Control of Measuring and Test Equipment	SOP K-68	Calibration of Measuring Instruments and Test Equipment	
	QAOP N3.00	Calibration of Measuring and Test Equipment	
	QAOP N3.02	Control of AI Tooling	
4. 13 Handling, Storage, and Shipping	SOP J-60	Handling and Storage of Project Critical Hardware	
	SOP K-44	Shipping	
	SOP K-50	Material Handling Equipment	
	EMP 3-43	Packaging Engineering	
	QAOP N6.05	Qualification of Special Processes	
	QAOP N12.00	Packaging and Shipping Instructions	
	MM M-3-6	Material Control	
	MM M-3-10	Packaging and Shipping	
4. 14 Inspection, Test, and Operating Status	SOP K-14	Shipping Radioactive Materials	
	HSP 29	Health and Safety "Red Tag" — Form N44-1	
	QAOP N5.01	Manufacturing Production Order	
	QAOP N9.00	Issuance, Use, and Control of Stamps	
4. 15 Nonconforming Materials, Parts, or Components	QAOP N10.00	Nonconforming Material and Items	
	SOP J-58	Receiving and Inspection of Incoming Material and Equipment	
	SOP M-48	Corrective Action System	
	SOP M-80	Unusual Occurrence Reports - RRD Programs	
4. 16 Corrective Action	SOP M-48	Corrective Action System	
	QAOP N10.00	Nonconforming Materials, Parts, and Components	
	QAOP N14.00	Corrective Action for Nonconforming Products	

10CFR71 Appendix E Requirement		AI Implementing Document	
		Number	Title
4.17	QA Records	SOP N-54	AI Quality Records
		EMP 3-1	Engineering Documentation Process
		CMP 2-126	Case File Documentation
		QAOP N2.03	Document Control
		QAOP N13.03	Use of QA Laboratory Test Report - Form 711-V
4.18	Audits	QAOP N13.04	Preparation and Use of Inspection Test Report Form 732Q
		SOP K-17	Audits of Special Nuclear Material Control and Radioactive Material Shipping Systems
		SOP N-52	Quality Assurance Program Audits
		QAOP N1.04	Quality Assurance Audits