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## QUALITY ASSURANCE PROGRAM REGULATIONS, DIRECTIVES, AND CONSENSUS STANDARDS REFERENCE GUIDE

The Quality Assurance Program Regulations, Directives, and Consensus Standards Reference Guide is designed to assist personnel in the proper determination of regulations, standards, directives, and policies which apply to Laboratory activities.

### 1.0 APPROVAL RECORD

- Reviewed by: Training & Documents, Quality Assurance Coordinator (Molly Granseth)
- Reviewed by: Manager, Accounting (John Clough)
- Reviewed by: Manager, Budget (Steph Boersma)
- Reviewed by: Manager, Facilities and Engineering Services (Doug Hoenig)
- Reviewed by: Interim Manager, Human Resources (Lynnette Witt)
- Reviewed by: Manager, Information Services (Diane Den Adel)
- Reviewed by: Manager, Internal Audit (Fran Dunshee)
- Reviewed by: Manager, Purchasing and Property (Andrea Spiker)
- Reviewed by: Legal Council (Barbara Biederman)
- Approved by: Manager, Quality Assurance & Manager, ESH&A (Sean Whalen)
- Approved by: Chief Operating Officer (Mark Murphy)
- Approved by: Deputy Director (Tom Lograsso)

The official approval record for this document is maintained by Training and Documents.

### 2.0 REVISION/REVIEW INFORMATION

In accordance with the [Document Control Program](#), this guide will be reviewed at a minimum of every five years. The revision description for this document is available from and maintained by the author.

### 3.0 PURPOSE and SCOPE

The Quality Assurance Program (QAP) Plan [Plan 10200.026] describes how Ames Laboratory provides reasonable assurance of adequate protection from adverse consequences for workers, the public, and the environment, taking into account the work to be performed and the associated hazards, as required by 10 CFR 830, Subpart A.

10 CFR 830.121(c)(3) and DOE O414D.1 Attachment 1 require that the QAP use voluntary consensus standards in its development and implementation, where practicable and consistent within the contractual and regulatory requirements, and identify the standards used. In addition to defining program areas where consensus standards are applied, this document provides a list of other regulations, directives, and policies which may apply to operational and research activities.



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#### 4.0 REGULATIONS, DIRECTIVES, AND CONSENSUS STANDARDS

Consensus Standards						
Number	Date	Title	Subject	1st SME	2nd SME	QA Criterion
		ASME Pressure Vessel Code	FES	Herrman	Hoening	5, 6
S-1.1		Compressed Gas Association Pamphlet - Pressure Relief Device Standards - Cylinders for Compressed Gases	FES	Herrman	Nelson	5, 6
S-1.2		Compressed Gas Association Pamphlet - Pressure Relief Device Standards-Cargo and Portable Tanks for Compressed Gases	FES	Herrman	Nelson	5, 6
S-1.3		Compressed Gas Association Pamphlet - Pressure Relief Device Standards - Compressed Gas Storage Containers.	FES	Herrman	Nelson	5, 6
		National Fire Protection Association (NFPA) National Fire Codes	Fire Protection	Herrman	Bartine	5, 6
		International Building Code	FES	Hoening	Herrman	6
		Uniform Mechanical Code	FES	Hoening	Herrman	6
ANSI/ASME B31.8		Gas Transmission and Distribution Piping Systems	FES	Hoening		6
ANSI N43.2		Radiation Safety for X-ray Diffraction and Fluorescence Analysis Equipment	Radiation Safety	McGuigan	Ewing	5
ANSI N43.3		Installations Using Non-Medical X-Ray and Sealed Gamma Ray Sources	Radiation Safety	McGuigan	Ewing	5
ANSI N323A-1997		American National Standard Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments	Radiation Safety	McGuigan	Ewing	5
ANSI/ASME B56.1		Safety Standard for Powered Industrial Low Lift and High Lift Trucks	Industrial Safety	Nelson	Bartine	5
ANSI/ASHRA E 62-1989		Ventilation for Acceptable Indoor Air Quality	Industrial Hygiene	Sager	Kim	5, 6
		ACGIH Industrial Ventilation Manual	Industrial Hygiene	Sager	Kim	5
		ACGIH TLV Booklet, as relevant to Specific Work Processes	Industrial Hygiene	Sager	Kim	5
		ANSI Standards, as relevant	Industrial Hygiene	Sager	Kim	5
C-6		Compressed Gas Association Pamphlet - Standards for Visual Inspection of Steel Compressed Gas Cylinders	Industrial Hygiene	Sager	Kim	5, 8



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P-1	Compressed Gas Association Pamphlet - Safe Handling of Compressed Gases in Containers	Industrial Hygiene	Sager	Kim	5
ANSI Z9.5	Lab Ventilation	Industrial Hygiene	Sager	Kim	5, 6
ANSI/ASME B31.9	Building Services Piping	FES	Vaclav		6
ANSI/ASME B31.5	Refrigeration Piping	FES	Vaclav		6

### DOE Directives

Number	Date	Title	Subject	1st SME	2nd SME	QA Criterion
DOE Std. 1090 – 2004	6/4/2016	Hoisting and Rigging Standard	Industrial Safety	Nelson	Bartine	5
M 460.2-1A	6/4/2008	Radioactive Material Transportation Practices	Materials Transportation	Spencer	McGuigan	5
M 481.1-1A Chg. 1	1/3/2001 9/28/2001	Reimbursable Work For Non-Federal Sponsors Process Manual	Sponsored Research	Covey	Joiner	
O 130.1	9/29/1995	Budget Formulation Process (extended by DOE N 251.45, 05/29/02)	Budget	Boersma	Lawson	
O 142.3A	10/14/2010	Unclassified Foreign Visits and Assignments Program	Foreign Visits & Assignments	Murphy	Bartine	
O 150.1A	3/31/2014	Continuity Programs	Emergency Management	Herrman	Hoenig	
O 151.1D	8/11/2016	Comprehensive Emergency Management System	Emergency Management	Herrman	Vaclav	
O 151.1D	8/11/2016	Comprehensive Emergency Management System	Emergency Management	Herrman	Bartine	
O 200.1A	12/23/2008	Information Technology Management	Information Systems	DenAdel	Murphy	
O 203.1	1/7/2005	Limited Personal Use Of Government Office Equipment Including Information Technology	Purchasing & Property	Murphy	Spiker	
O 205.1B Chg. 1 Chg. 2 Chg. 3	5/16/2011 12/7/2012 3/11/2013 4/29/2014	Department of Energy Cyber Security Program	Cyber Security	DenAdel	Bartine	
O 206.1	1/16/2009	Department of Energy Privacy Program	Human Resources	Witt	Murphy	
O 206.2	2/19/2013	Identity, Credential, and Access Management (ICAM)	Safeguards & Security	Bartine	Hertzke	



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O 210.2A	4/8/2011	DOE Corporate Operating Experience Program		Nelson	Bartine	3
O 221.1A	4/19/2008	Reporting Fraud, Waste, and Abuse to the Office of Inspector General	Human Resources	Witt	Murphy	3
O 221.2A	2/25/2008	Cooperation with the Office of Inspector General	Audit	Dunshee	Murphy	
O 225.1B	3/4/2011	Accident Investigation	Industrial Safety	Nelson	Bartine	3
O 226.1B	4/25/2011	Implementation of Department of Energy Oversight Policy		Murphy	Whalen	
O 227.1	8/30/2011	Independent Oversight Program		Whalen	Nelson	
O 231.1B Chg. 1	6/27/2011 11/28/2012	Environment Safety & Health Reporting	Env. Protection	Morris-Benavides	Whalen	3
O 232.2 Admin Chg. 1	8/30/2011 3/12/2014	Occurrence Reporting and Processing of Operations Information	Industrial Safety	Nelson	Bartine	3
O 241.1B	12/13/2010	Scientific and Technical Information Management	Intellectual Property	Joiner	Covey	
O 243.1B Admin Chg. 1	3/11/2013 7/8/2013	Records Management Program	Records Management	DeShong	Granseth	4
O 252.1A Admin Chg. 1	2/23/2011 3/12/2013	Technical Standards Program	Quality Assurance	Whalen	Herrman	1
O 350.1 Chg.1 Chg. 2 Chg. 3 Chg. 4 Chg. 5	9/30/1996 5/8/1998 11/22/2009 2/23/2010 4/29/2013 9/30/2014	Contractor Human Resource Management Programs (Except as otherwise modified in Appendix A of this Contract)	Human Resources	Witt	Murphy	
O 410.2 Admin Chg. 1	8/17/2009 4/10/2014	Management of Nuclear Materials	Radiation Safety	McGuigan	Ewing	5
O 412.1A Admin Chg. 1	4/21/2005 4/21/2014	Work Authorization System	Budget	Boersma	Lawson	
O 413.1B	10/28/2008	Internal Control Program	Accounting	Clough	Murphy	
O 413.2C	10/22/2015	Laboratory Directed Research and Development	Research & Development	D. Johnson	Boersma	
O 413.2C	10/22/2015	Laboratory Directed Research and Development	Research & Development	Boersma	Covey	
O 413.3B Chg. 2	11/29/2010 5/12/2016	Program and Project Management of the Acquisition of Capital Assets	FES	Hoening	Vaclav	
O 414.1D Admin Chg. 1	4/25/2011 5/8/2013	Quality Assurance	Quality Assurance	Whalen	Granseth	1



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O 420.1C Chg. 1	12/4/2012 2/27/2015	Facility Safety (Note – Chapters 1, 3, & 5 not applicable)	Industrial Safety	Nelson	Bartine	
O 430.1B Chg. 1 Chg. 2	9/24/2003 2/8/2008 4/25/2011	Real Property Asset Management	FES	Hoenig	Vaclav	
O 430.1C	8/19/2016	Real Property Asset Management	FES	Hoenig	Vaclav	
O 435.1 Chg. 1 Chg. 2	7/9/1999 8/28/2001 1/9/2007	Radioactive Waste Management	Radiation Safety	Morris-Benavides	McGuigan	5
O 436.1	5/2/2011	Departmental Sustainability	Sustainability	Morris-Benavides	Vaclav	
O 442.1A	6/6/2001	Department of Energy Employee Concerns Program	Industrial Safety	Nelson	Bartine	
O 442.2	7/29/2011	Differing Professional Opinions Manual for Technical Issues Involving Environment, Safety and Health		Whalen	Nelson	
O 443.1B	3/17/2011	Protection of Human Subjects	Industrial Hygiene	Sager	Kim	
O 450.2	4/25/2011	Integrated Safety Management	ISMS	Morris-Benavides	Whalen	5
O 456.1	7/15/2016	The Safe Handling of Unbound Engineered Nanoparticles	Industrial Hygiene	Sager	Kim	5
O 458.1 Chg. 1 Chg. 2 Chg. 3	2/11/2011 3/8/2011 6/6/2011 1/15/2013	Radiation Protection of the Public and the Environment	Radiation Safety	McGuigan	Morris-Benavides	5
O 460.1C	5/14/2010	Packaging and Transportation Safety	Materials Transportation	Spencer	Morris-Benavides	5
O 460.2A	12/22/2004	Departmental Materials Transportation and Packaging Management	Materials Transportation	Spencer	Morris-Benavides	5
O 470.4B Admin Chg. 1	7/21/2011 2/15/2013	Safeguards and Security Program	Safeguards & Security	Bartine	Hertzke	
O 470.5	6/2/2014	Insider Threat Program	Safeguards & Security	Bartine	Hertzke	
O 471.3 Admin Chg. 1	4/9/2003 1/13/2011	Manual for Identifying and Protecting Official Use Only Information	Safeguards & Security	Bartine	Muphy	4
O 472.2 Admin Chg. 1 Chg. 1	7/21/2011 10/8/2013 07/09/14	Personnel Security (Note - only applicable to those requesting an Access Authorization)	Safeguards & Security	Bartine	Muphy	
O 473.3A	3/23/2016	Protection Program Operations Operations Note – applicable sections include: Attachment 1 Contractor	Safeguards & Security	Bartine	Hertzke	



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Requirements Document; Attachment 3 Physical Protection – Sections A & B only)						
O 474.2	6/27/2011	Nuclear Material Control and	Radiation Safety	McGuigan	Bartine	3
Admin Chg. 1	8/3/2011	Accountability				
Chg. 2	11/19/2012					
Chg. 3	5/15/2015					
O 475.1	12/10/2004	Counterintelligence Program	Counter-intelligence	Murphy	Bartine	
O 481.1C	1/24/2005	Strategic Parntership Projects	Sponsored Research	Covey	Murphy	
Chg. 1	3/14/2011					
Chg. 2	3/9/2015					
O 483.1A	11/16/2013	DOE Cooperative Research and Development Agreements	Sponsored Research	Covey	Joiner	
O 484.1	8/17/2006	Reimbursable Work for Department of Homeland Security	Sponsored Research	Covey	Joiner	
Admin Chg. 1	3/14/2011					
Admin Chg. 2	6/30/2014					
O 522.1	11/3/2004	Pricing of Departmental Materials & Services	Accounting	Clough	Murphy	
O 534.1B	1/6/2003	Accounting	Accounting	Clough	Murphy	
O 5480.19	7/9/1990	Conduct of Operations Requirements for DOE Facilities	Quality Assurance	Whalen	Murphy	
Chg. 1	5/18/1992					
Chg. 2	10/23/2001					
O 551.1D	4/2/2012	Official Foreign Travel	Travel	Crosman	Murphy	
Chg. 1	8/13/2015					
O 580.1	3/30/2012	DOE Personal Property Management Program	Purchasing & Property	Spiker	Spencer	
Chg. 1	10/22/2012					

### Federal Regulations

Number	Date	Title	Subject	1st SME	2nd SME	QA Criterion
10 CFR 1021		National Environmental Policy Act Implementation Procedures	Env. Protection	Morris-Benavides	Whalen	5
10 CFR 830 Subpart A		Quality Assurance Requirements	Quality Assurance	Whalen	Granseth	1
10 CFR 835		Occupational Radiation Protection	Radiation Safety	McGuigan	Ewing	5
10 CFR 850		Chronic Beryllium Disease Prevention Program	Industrial Hygiene	Sager	Kim	5
10 CFR 860		Trespassing on Department of Energy Property	Safeguards & Security	Bartine	Hertzke	



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28 CFR 36	Nondiscrimination on the Basis of Disability by Public Accommodations		Whalen	Bartine	
29 CFR 1910	Subpart L Fire Protection	Fire Protection	Herrman	Bartine	5
29 CFR 1910	Subpart G Occupational Health and Environmental Control	Industrial Hygiene	Sager	Kim	5
29 CFR 1910	Subpart H Hazardous Materials	Industrial Hygiene	Sager	Kim	5
29 CFR 1910	Subpart Z Toxic and Hazardous Substances	Industrial Hygiene	Sager	Kim	5
29 CFR 1910	Subpart Q Welding, Cutting & Brazing	Industrial Safety	Bartine	Nelson	5
29 CFR 1910	Subpart K Medical and First Aid - General	Industrial Safety	Bartine	Sager	5
29 CFR 1910	General Industry Standards, as applicable	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart D Walking-Working Surfaces	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart E Means of Egress	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart F Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart I Personal Protective Equipment	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart M Compressed Gas and Compressed Air Equipment	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart N Materials Handling and Storage	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart O Machinery and Machine Guarding	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart P Hand and portable powered tools and equipment, general	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart S Electrical	Industrial Safety	Nelson	Bartine	5
29 CFR 1910	Subpart J General Environmental Controls	Industrial Safety	Sager	Kim	5
29 CFR 1926	Subpart Z Toxic and Hazardous Substances	Industrial Hygiene	Sager	Kim	5
29 CFR 1926	Subpart J Welding/Cutting	Industrial Safety	Bartine	Nelson	5



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29 CFR 1926	Safety and Health Regulations for Construction, as relevant	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart C General Safety and Health Provisions	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart E Personal Protective & Life Saving Equipment	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart H Materials Handling, Storage, Use and Disposal	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart L Scaffolds	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart N Cranes, Derricks, Hoists, Elevators and Conveyors	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart O Motor Vehicles, Mechanized Equipment and Marine Operations	Industrial Safety	Nelson	Bartine	5
29 CFR 1926	Subpart P Excavations	Industrial Safety	Nelson	Bartine	5
29 CFR 1926.52	Occupational Noise Exposure (part of Subpart D, Occupational Health and Environmental Controls)	Industrial Hygiene	Sager	Kim	5
29 CFR 1926.62	Lead (part of Subpart D, Occupational Health and Environmental Controls)	Industrial Hygiene	Sager	Kim	5
40 CFR 112	Oil Pollution Prevention; Spill Prevention, Controls and Countermeasures	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 131	Water Quality Standards	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 141	National Primary Drinking Water Regulations	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 260, 261, 262, 263, 264 Subpart S, 265, 268	Hazardous Waste Implementing Rules	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 273	Standards for Universal Waste Management	Env. Protection	Morris-Benavides	Whalen	
40 CFR 279	Standards for the Management of Used Oil	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 302	Designation, Reportable Quantities and Notification	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 355	Emergency Planning and Notification	Emergency Management	Morris-Benavides	Whalen	



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40 CFR 61 Subpart H	National Emission Standards of Radionuclides Other than Radon from DOE Facilities	Env. Protection	McGuigan	Morris-Benavides	5
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions	Env. Protection	Morris-Benavides	Whalen	5
40 CFR 82	Protection of Stratospheric Ozone	Env. Protection	Morris-Benavides	Whalen	5
49 CFR 171-180	DOT Hazardous Materials Regulations	P&T	Spencer	Morris-Benavides	5
49 CFR 383.23	Commercial Drivers' License	P&T	Spencer	Morris-Benavides	5
Executive Order 12580 Sections 8 and 11	Superfund Implementation	Env. Protection	Morris-Benavides	Whalen	5
Executive Order 13693	3/25/2015 Planning for Federal Sustainability in the Next Decade	Sustainability	Morris-Benavides	Vaclav	
	Clean Air Act 112 (General Duty Clause)	Env. Protection	Morris-Benavides	Whalen	5

State Regulations						
Number	Date	Title	Subject	1st SME	2nd SME	QA Criterion
347 IAC 110, 120, 130, 140		Right-To-Know	Industrial Hygiene	Sager	Kim	5
567 IAC 20, 21, 22.1-22.4, 22.7, 23.1(3) and (4), 23.2-23.4, 23.6, 24, 28		Air Quality, Pollution Prevention and Emmissions	Env. Protection	Morris-Benavides	Whalen	5
567 IAC 100, 101, 109, 110, 118, 119		Solid Waste Management and Disposal	Env. Protection	Morris-Benavides	McGuigan	5
567 IAC 131		Notification of Hazardous Conditions	Env. Protection	Morris-Benavides	Whalen	5
567 IAC 133		Determining Cleanup Actions and Responsible Parties	Env. Protection	Morris-Benavides	Whalen	5
567 IAC 140 and 141		Hazardous Waste	Env. Protection	Morris-Benavides	McGuigan	5
567 IAC 39		Requirements for Properly Plugging Abandoned Wells	Env. Protection	Morris-Benavides	Whalen	5



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567 IAC 60		Wastewater Treatment and Disposal: Definitions, Rules of Practice	Env. Protection	Morris-Benavides	Whalen	5
567 IAC 61		Water Quality Standards	Env. Protection	Morris-Benavides	Whalen	5
641.IAC 38.8(11)	8/3/2016	Radioactive Waste Transport Fee Schedule	Env. Protection	Morris-Benavides	McGuigan	5
661 IAC, Chapter 5.300-5.314		Public Safety, Flammable and Combustible Liquids Code	Fire Protection	Herrman	Bartine	5
Chapter 321.174-321.235 and 321.252-321.562		Code of Iowa, Motor Vehicles and Law of the Road	Materials Transportation	Spencer	Morris-Benavides	5

### Miscellaneous Standards

Number	Date	Title	Subject	1st SME	2nd SME	QA Criterion
3593-3 & 4093-3		ISU - City Of Ames Pretreatment Agreements	Env. Protection	Morris-Benavides	Whalen	5
		State Of Iowa Plumbing Code	Fire Protection	Bartine	Nelson	5
		Iowa State University Cylinder Safety Guidelines	Industrial Hygiene	Sager	Kim	5
42nd Edition and Subsequent		IATA Dangerous Goods Regulations	Materials Transportation	Spencer	Morris-Benavides	5