U.S. NUCLEAR REGULATORY COMMISSION (03-2013)  CONVERSATION RECORD			DATE OF SIGNATURE
			01/31/2014
NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU		DATE OF CONTACT	TYPE OF CONVERSATION
Nathan H. Long (Radiation Safety Officer)		01/15/2014	E-MAIL
E-MAIL ADDRESS		TELEPHONE NUMBER	▼ TELEPHONE INCOMING
NA@example.com		(812) 853-4710	OUTGOING
ORGANIZATION	DOCKET NUMBER(S)		
Alcoa Inc.	030-20691		
LICENSE NUMBER(S)	CONTROL NUMBER(S)	CONTROL NUMBER(S)	
13-20664-01	582395		
SUBJECT Request additional information regarding the proposed authorized user			
(AU), as suggested in NUREG-1556, Volume 4. The Hath Ms. Griffin is scheduled to complete all necessary to Ms. Griffin's training record by fax. The reviewer provi	raining by February 4, 2014. A	fter the completion,	he will provide a copy of
In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.			
Continue on Page 3  NAME OF PERSON DOCUMENTING CONVERSATION  Frank Tran			
SIGNATURE	5		
NRC FORM 699 (03-2013)			Page 1 of

# Nevada Technical Associates, Inc. Radiation Safety Officer Course Outline

Starting time: 8:30 each day.

The topics below will be more or less evenly distributed over the duration of the course.

- 1. Introduction
  - a. Course objectives and schedule
  - b. Origins of nuclear science
  - c. Atomic structure, isotopes, nuclear stability
  - d. Equations of radioactive decay
- 2. Radioactive Decay Processes
  - a. Alpha emission
  - b. Beta emission
  - c. Gamma emission
  - d. Other decay processes
  - e. Statistics of radioactive decay
- 3. Interaction of Radiation with Matter
  - a. Modes of interaction
  - b. Heavy charged particle interactions
  - c. Beta particle interaction
  - d. Gamma ray interaction
  - e. Neutron interaction
- 4. Radiation Detection and Measurement
  - a. Gas-filled chambers
  - b. Scintillation detectors
  - c. Semi-conductors
  - d. Photographic emulsions

#### 5. Biological Effects of Radiation

- a. Radiation quantities and units
- b. Quality factors
- c. Biological effects
- d. Mechanisms of biological damage
- e. Acute, whole-body gamma radiation
- f. Risk of stochastic effects
- g. Fatality rates in various industries
- h. Radiation dose from natural and man-made sources

#### 6. Shielding

- a. Charged particle shielding
- b. Photon shielding
- c. Neutron shielding
- d. Facility shielding

### 7. Personnel Radiation Dosimetry Devices and Methods

- a. External monitoring
- b. External dose evaluation
- c. Internal monitoring
- d. Internal dose assessment

#### 8. Federal and State Regulations

- a. Chronology of standards
- b. Sources of standards, recommendations and requirements
- c. Basis of Standards
- d. Current regulations
- e. Licensing procedures

# 9. Radiological Safety Surveys, Records and Documentation

- a. Surveys and inspections
- b. Radiological Controls and ALARA
- c. Records and documents
- d. Operating and emergency procedures and document control

### 10. Radioactive Material Transportation and Disposal Regulations

- a. Applicable regulations
- b. Categories, packaging and limits
- c. Manifests, records, markings, and labels
- d. Radwaste disposal methods, sites, records and regulations

# 11. Radiological Emergencies

- a. Definitions, classifications and phases
- b. Notifications and assistance
- c. Response: isolation, radiation and medical evaluations
- d. Review of accident causes and recent accidents
- 12. Drafting a Radiological Safety Plan (student exercise)
  - a. Attendees prepare program
  - b. Exercise review