

**JOB / TASK ANALYSIS for  
Nuclear Safety Specialist (NSS) Functional Area Qualification  
Standard (FAQS)  
DOE-STD-1183-2007**

**Instructions for Step 1:**

Step 1 Identify and evaluate tasks

- Develop a comprehensive list of tasks that define the job.
  - o A great starting point is the list of Duties and Responsibilities from the FAQS.
  - o Give careful thought to additional tasks that could be considered.
  - o Don't worry about deleting tasks at this point – that is a part of the process further down.
- List the tasks (and their sources, e.g., Duties and Responsibilities #1) in the chart below.
- Discuss each task as a group and come to a consensus pertaining to Importance and Frequency of the task (i.e., each team member can consent to the assigned value, even if they don't exactly agree with it).
- When all values have been assigned, consider as a group deleting tasks that receive low scores for Importance.

<b>Importance Scale</b>	<b>Frequency</b>
How important is this task to the job?	How often is the task performed?
0 = Not Performed	0 = Not Performed
1 = Not Important	1 = Every few months to yearly
2 = Somewhat Important	2 = Every few weeks to monthly
3 = Important	3 = Every few days to weekly
4 = Very Important	4 = Every few hours to daily
5 = Extremely Important	5 = Hourly to many times each hour

**Preliminary Results for Step 1:**

**Note: All tasks are derived from the listing of duties and responsibilities as identified in the NSS FAQS. The listing of tasks (duties/responsibilities) for NSS qualified staff is intended to apply regardless of location (site office or headquarters). However, it is important to recognize that the importance or frequency of a task can significantly vary based on location, i.e., site office NSS staff may more frequently be concerned with safety control implementation. The performance of an internal (NA-SH-30) review demonstrated that there is in some instances a wide difference of opinion as to the importance of a task. Those tasks where differences were identified in importance are highlighted in yellow.**

### Job Analysis Worksheet for Tasks

<b>Task</b>	<b>Source</b>	<b>Importance</b>	<b>Frequency</b>
1. Oversee implementation of nuclear safety requirements and programs including: Participate in the oversight of contractor implementation of the Nuclear Safety Management Rule (10 CFR 830 Subpart B) e.g., preparation, review and/or recommendation for approval of nuclear basis safety documents: Documented Safety Analyses (DSAs), Technical Safety Requirements (TSRs), Unreviewed Safety Questions (USQ), Safety Evaluation Reports (SERs), etc.	Duties & Responsibilities #1 bullet 1	5	4
2. Oversee implementation of nuclear safety requirements and programs including: Evaluate implementation of Integrated Safety Management (ISM) as related to safety bases: identification, surveillance and maintenance of safety Structures, Systems, and Components (SSCs), safety-related Quality Assurance (QA), selection and implementation of safety-related standards, related nuclear safety management programs.	Duties & Responsibilities #1 bullet 2	<b>3</b> One individual suggested a higher level another suggested a lower level.	<b>2</b> One individual suggested a higher level another suggested a lower level.
3. Oversee implementation of nuclear safety requirements and programs including: Evaluate the nuclear safety posture of nuclear facilities and operations for Price-Anderson Amendment Act compliance, contract performance, operational readiness reviews, readiness assessments, and other periodic assessments. Participate in enforcement of Price-Anderson Amendments Act requirements.	Duties & Responsibilities #1 bullet 3	<b>3</b> One individual suggested a higher level another suggested a lower level.	<b>2</b> One individual suggested a higher level another suggested a lower level.
4. Oversee implementation of nuclear safety requirements and programs including: Participate in nuclear facility design reviews, safety system status monitoring, etc.	Duties & Responsibilities #1 bullet 4	<b>3</b> Higher level suggested.	<b>1</b> Higher level suggested.
5. Oversee implementation of nuclear safety requirements and programs including: Evaluate design and analysis uncertainties with the functionalities of systems as described in the DSA.	Duties & Responsibilities #1 bullet 5	<b>2</b> Higher level suggested.	<b>1</b> Higher level suggested.
6. Communicate nuclear safety issues through the site/office management to Department and contractor management and other stakeholders and assist in the resolution of these issues.	Duties & Responsibilities #2	5	3
7. Participate in the development, review, approval and interpretation of nuclear safety Rules, Orders, Policies, standards, guides, and	Duties & Responsibilities	4	1

documents.	#3		
8. Participate in Departmental self-assessments in the area of nuclear safety.	Duties & Responsibilities #4	3	1
9. Participate in nuclear facility accident/incident investigations.	Duties & Responsibilities #5	2 One individual suggested a higher level another suggested a lower level.	1
10. Participate in emergency response activities.	Duties & Responsibilities #6	2 Lower level suggested.	1
11. Maintain and increase professional knowledge and expertise related to the field of nuclear safety.	Duties & Responsibilities #7	3	2
12. <b>ADDED:</b> Oversee the implementation of the integration of safety into the design process for new or major modifications to DOE nuclear facilities. This includes the preparation, review and/or recommendation of approval of Conceptual Safety Design Reports (CSDRs), Preliminary Safety Design Reports (PSDRs), and Preliminary Documented Safety Analyses (PDSAs).	DOE-STD-1189-2008	5	4
13. <b>ADDED:</b> Evaluate the adequacy of the identification of safety controls (SSCs and SACs), their safety functions, functional requirements, and performance criteria necessary to provide adequate protection of the public, collocated worker, worker, and environment from identified hazards.	10 CFR 830 Subpart B & DOE-STD-3009	5	3

**Conclusions:** Frequency should not be considered in ranking the duties/responsibilities. Example: SERs are not generated on a daily basis; however, the ability to develop a SER is of high importance in performing in the safety basis area. It is suggested that the ranking of NSS duties/responsibilities should be based on the level of importance only. Also, it is suggested that the individual duties/responsibilities listed in the FAQS be re-visited. Currently, there are 11 duties/responsibilities identified in the NSS FAQS. These 11 duties/responsibilities can be grouped as follows:

Oversight and Implementation –

1. Nuclear Safety Rule – preparation, review and/or recommendation for approval of nuclear safety basis documents (e.g., DSAs, TSRs, USQ, SERs, etc.).

2. ISM – identification, surveillance, and maintenance of SSCs, safety-related QA, selection and implementation of safety-related standards, related nuclear safety management programs.
3. PAAA – enforcement of requirements.
4. Nuclear facility design reviews and safety system status monitoring.
5. Design and analysis uncertainties with the functionalities of systems.

#### Communications –

6. Communicate issues to site/office management, etc.

#### Participation –

7. Development, review, approval and interpretation of nuclear safety Rules, Orders, Policies, Standards, Guides, and Documents.
8. Self-assessments in the area of nuclear safety.
9. Nuclear facility accident/incident investigations.
10. Emergency response activities.

#### Qualification –

11. Maintain and increase professional knowledge and expertise related to the field of nuclear safety.

These duties/responsibilities do not line up with 10 CFR 830 Subpart B requirements.

Duties/responsibilities reviewed for other functional areas have been based on requirements identified in DOE directives. Thus, the following is a proposal of new duties/responsibilities that better correspond to the Subpart B.

#### Oversight and Implementation –

1. Perform oversight activities (e.g., assessments) that verify contractors perform work in accordance with the safety basis for a hazard category 1, 2, or 3 DOE nuclear facility and in particular, with the hazard controls that ensure adequate protection of workers, the public, and the environment. (10 CFR 830.201)
2. Verify the contractor has adequately categorized a facility/activity consistent with DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*. (10 CFR 830.202)
3. Evaluate the establishment and implementation of a Unreviewed Safety Question (USQ) process that meets the requirements of 10 CFR 830.203 (e.g., recommend for approval the contractor's USQ Procedure, recommend for approval any positive USQs, evaluate PISAs, etc.). (10 CFR 830.203)
4. Evaluate the documented safety analysis (DSA) by considering the extent to which the DSA (1) satisfies the provisions of the methodology used to prepare the DSA and (2) adequately addresses the criteria set forth in 10 CFR 830.204(b). (10 CFR 830.204)

5. Review and recommend for approval Technical Safety Requirements (TSRs). (10 CFR 830.205)
6. Evaluate and recommend for approval nuclear safety design criteria to be used for a new facility or major modification in preparing the preliminary documented safety analysis (PDSA). This applies to the situation where the design criteria used is not obtained from DOE Order 420.1B, *Facility Safety*. (10 CFR 830.206)
7. Prepare a Safety Evaluation Report (SER) to document the results of the review of the DSA/TSRs. (10 CFR 830.207)
8. Verify the integration of safety into the design process for new or major modifications to DOE nuclear facilities. This includes the preparation, review and/or recommendation of approval of Conceptual Safety Design Reports (CSDRs), Preliminary Safety Design Reports (PSDRs), and Preliminary Documented Safety Design Reports (PDSAs). Prepare Conceptual Safety Validation Reports (CSVs), Preliminary Safety Validation Reports (PSVRs), and SERs. (DOE-STD-1189-2008)
9. Evaluate the adequacy of the identification of safety controls, their safety functions, functional requirements, and performance criteria necessary to provide adequate protection of the public, collocated worker, worker, and environment from identified hazards. (10 CFR 830 Subpart B, Appendix A, Section G, Hazard Controls)
10. Evaluate the implementation of nuclear safety basis requirements consistent with Integrated Safety Management (ISM). (10 CFR 830 Subpart B, Appendix A, Section D, ISM)
11. Evaluate the nuclear safety posture of nuclear facilities and operations for Price-Anderson Amendment Act compliance. (10 CFR 830 Subpart B, Appendix A, Section E, Enforcement of Safety Basis Requirements)

Participation –

12. Participate in nuclear facility accident/incident investigations.
13. Participate in readiness assessments, operational readiness reviews, self- assessments, and periodic assessments.
14. Participate in emergency response activities.

Expertise –

15. Interpret and participate in the development, review, and recommendation for approval of nuclear safety Rules, Orders, Policies, Standards, Guides, and Documents.
16. Maintain and increase professional knowledge and expertise related to the field of nuclear safety.
17. Communicate issues to site/office management, etc.

The new proposed duties/responsibilities cover the current duties/responsibilities listed in DOE-STD-1183 (NSS FAQs) except for two items:

- Perform nuclear facility design reviews, and

- Evaluate design and analysis uncertainties with the functionalities of systems as described in the DSA.

While the performance of nuclear facility design reviews is not specifically addressed in 10 CFR 830 Subpart B, it can be associated with verification of the appropriate nuclear safety design criteria to be used for a new facility or major modification. The performance of nuclear safety design reviews needs further evaluation in terms of clarifying the expectations a NSS qualified staff member will need to meet to adequately perform this task. There are five competencies contained in the NSS FAQs that attempt to address design reviews; however, the competencies do not cover all aspects of what would be required to perform an adequate design review, i.e., only limited aspects of a few disciplines are addressed. The following discussion is presented as a means of better understanding what is meant by design reviews:

The content of a design review is a function of the scope of the review (can be general, discipline specific, system specific, component specific, etc.) and the level of the review (conceptual, preliminary, final). As far as qualifications are concerned, the reviewers should be SMEs in the areas that they will be reviewing (e.g., electrical engineer reviewing electrical drawings).

The most essential design review function is that of the review plan. The plan will specify the scope and content of the review. Some areas to keep in mind are completeness of the design, safety features of the design, compliance with standards, codes, etc., and constructability.

It is not clear that DOE has any written guidance for design reviews conducted by the federal staff. The contractors should have a design review process that meets the requirements of the 10 CFR 830 Subpart A Quality Assurance Requirements. The contractors process can be used as a starting point for developing a review plan for a design review done by the federal staff.

Additionally, the second task that needs further evaluation is the need to evaluate design and analysis uncertainties with the functionalities of systems.

Finally, it is clear that strong opinions will be voiced as to what duties/responsibilities should be listed and their level of importance. Overall, the level of importance is expected to be “High” for all tasks under Oversight and Implementation, “High” for Expertise/Qualification/Communication, and “Medium” for Participation.

### **Instructions for Step 2 - Identify and evaluate competencies:**

*A competency is a measurable pattern of knowledge, skills, abilities, behaviors and other characteristics that an individual needs in order to perform work roles or occupational functions successfully.*

- Identify the competencies directly related to performance on the job.
- Discuss each competency as a group and come to a consensus pertaining to Importance and Need at Entry of the competency.

- When all values have been assigned, consider as a group deleting tasks that receive low scores for Importance.

Importance Scale	Need At Entry Scale
How important is this competency for effective job performance?	When is this competency needed for effective job performance?
1 = Not Important	1 = Needed the first day
2 = Somewhat Important	2 = Must be acquired within the first 3 months
3 = Important	3 = Must be acquired within the first 4-6 months
4 = Very Important	4 = Must be acquired after the first 6 months
5 = Extremely Important	5 = Must be acquired prior to qualification

**Preliminary Results for Step 2:**

**Note: The performance of an internal (NA-SH-30) review demonstrated that there is in several instances a wide difference of opinion as to the importance of a competency. Those competencies where differences were identified are highlighted in yellow.**

**Job Analysis Worksheet for Competencies**

Competency	Source	Importance	Need at Entry
A. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the fission process. (Competency #1)	DOE-STD-1183 #1	3	<b>3</b> Lower level suggested.
B. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the principles and concepts for internal and external dosimetry, dose consequences, and the various methods to reduce exposure. (Competency #2)	DOE-STD-1183 #2	3	3
C. Nuclear safety specialists shall demonstrate a familiarity level knowledge of criticality control, safety parameters, alarm systems, and poisons. (Competency #3)	DOE-STD-1183 #3	<b>3</b> Lower level suggested.	<b>3</b> Higher level suggested.
D. Nuclear safety specialists shall demonstrate a working level knowledge of terminology used in nuclear safety analysis. (Competency #4)	DOE-STD-1183 #4	5	2
E. Nuclear safety specialists shall demonstrate a working level knowledge of the principle hazard and accident analysis methods. (Competency #5) <b>Mandatory Performance Activities: Participate on at least 5 safety basis document or amendment reviews whose</b>	DOE-STD-1183 #5	5	3

<b>major focus deals with hazard or accident analysis.</b>			
F. Nuclear safety specialists shall demonstrate a familiarity level knowledge of terminology associated with PRA techniques. (Competency #6)	DOE-STD-1183 #6	<b>3</b> One individual suggested this be removed.	<b>4</b>
G. Nuclear safety specialists shall demonstrate a familiarity level knowledge of basic Heating, Ventilation, Air Conditioning (HVAC) system and filtration system construction, operation, and application. (Competency #7)	DOE-STD-1183 #7	<b>2</b> Higher level suggested. Associated with the performance of design reviews.	4
H. Nuclear safety specialists shall demonstrate a familiarity level knowledge of process instrumentation principles of operation as applied to nuclear safety-related systems. (Competency #8)	DOE-STD-1183 #8	<b>2</b> Higher level suggested. Associated with the performance of design reviews.	5
I. Nuclear safety specialists shall demonstrate a familiarity level knowledge of P&ID. (Competency #9)	DOE-STD-1183 #9	<b>2</b> Higher level suggested. Associated with the performance of design reviews.	5
J. Nuclear safety specialists shall demonstrate a familiarity level knowledge of electrical diagrams and schematics. (Competency #10)	DOE-STD-1183 #10	<b>1</b> Higher level suggested. Associated with the performance of design reviews.	5
K. Nuclear safety specialists shall demonstrate a familiarity level knowledge of electrical logic diagrams. (Competency #11)	DOE-STD-1183 #11	<b>1</b> Higher level suggested. Associated with the performance of design reviews.	5
L. Nuclear safety specialists shall demonstrate a working level knowledge of radioactivity and transformation mechanisms. (Competency #12)	DOE-STD-1183 #12	<b>4</b> Lower level suggested.	<b>3</b> Higher level suggested.
M. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the biological effects of radiation. (Competency #13)	DOE-STD-1183 #13	<b>3</b> Lower level suggested.	<b>3</b> Higher level suggested.
N. Nuclear safety specialist shall demonstrate a familiarity level knowledge of the principles and	DOE-STD-1183 #14	<b>4</b> Lower level	<b>3</b> Higher level

use of radiological instrumentation and radiological monitoring/survey practices. (Competency #14)		suggested.	suggested.
O. Nuclear safety specialists shall demonstrate a working level knowledge of 10 CFR 830.204, <i>Documented Safety Analysis</i> , and DOE Guide (G) 421.1-2, <i>Implementation Guide For Use in Developing Documented Safety Analyses To Meet Subpart B of 10 CFR 830</i> , with respect to their impact on the Department's nuclear safety. (Competency #15)	DOE-STD-1183 #15	5	2
P. Nuclear safety specialists shall demonstrate a working level knowledge of 10 CFR 830.207, <i>DOE Approval of Safety Basis</i> and DOE-STD-1104-96, <i>Review and Approval of Nuclear Facility Safety Basis Documents (Documented Safety Analysis and Technical Safety Requirements)</i> , with respect to their impact on the Department's nuclear safety. (Competency #16) <b>Mandatory Performance Activities: Direct participation or assistance in the development of at least 2 SERs.</b>	DOE-STD-1183 #16	5	3
Q. Nuclear safety specialists shall demonstrate a working level knowledge of 10 CFR 830.206, <i>Preliminary Documented Safety Analysis</i> , with respect to its impact on the Department's nuclear safety. (Competency #17)	DOE-STD-1183 #17	5	3
R. Nuclear safety specialists shall demonstrate a working level of knowledge of 10 CFR 830.202, <i>Safety Basis</i> , and DOE-STD-1027-92, <i>Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports</i> , with respect to their impact on the Department's nuclear safety. (Competency #18) <b>Mandatory Performance Activities: Participate in at least 2 hazard categorization designation reviews.</b>	DOE-STD-1183 #18	5	3
S. Nuclear safety specialists shall demonstrate a familiarity level of knowledge of DOE O 420.1B, <i>Facility Safety</i> ; DOE G 420.1-1, <i>Nonreactor Nuclear Safety Design Criteria and Explosive Safety Criteria Guide for use with DOE O 420.1 Facility Safety</i> ; and DOE-STD-1020-2002, <i>Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities</i> ; with respect to their impact on the Department's nuclear safety. (Competency #19)	DOE-STD-1183 #19	5	4

<p>T. Nuclear safety specialists shall demonstrate a working level knowledge of the TSRs as described in 10 CFR 830.205, <i>Technical Safety Requirements</i>, and DOE G 423.1-1, <i>Implementation Guide for Use in Developing Technical Safety Requirements</i>, with respect to its impact on the Department’s nuclear safety. (Competency #20)</p> <p><b>Mandatory Performance Activities:</b>  <b>Participate on a combination of at least 5 safety basis document reviews and/or review of safety basis documents and/or performance of a field walk-down of a safety related SSC to determine proper derivation of SL/LCS/LCO/SAC/AC including SRs.</b></p>	DOE-STD-1183 #20	5	2
<p>U. Nuclear safety specialists shall demonstrate a working level of knowledge of 10 CFR 830.203, <i>Unreviewed Safety Question Process</i>, and DOE G 424.1-1A, <i>Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements</i>, with respect to their impact on the Department’s nuclear safety. (Competency #21)</p> <p><b>Mandatory Performance Activities:</b>  <b>Participate on either at least 1 assessment of the contractor USQ process or 1 regulatory review of either a new or revised contractor USQ procedure or review of 1 JCO.</b></p>	DOE-STD-1183 #21	5	2
<p>V. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the relationships between the problems being addressed by safety analysis and computer codes, the design requirements for the codes, and the components of the codes. (Competency #22)</p>	DOE-STD-1183 #22	2	5
<p>W. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the following criticality safety-related American National Standards Institute/American Nuclear Society (ANSI/ANS) standards:</p> <ul style="list-style-type: none"> <li>• ANSI/ANS-8.1, <i>Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors</i></li> <li>• ANS-8.3 (ANSI N-16.2), <i>Criticality Accident Alarm System</i></li> <li>• ANS-8.5 (ANSI N-16.4), <i>Use of Borosilicate-Glass Raschig Rings as a Neutron Absorber in Solutions of Fissile Material</i></li> <li>• ANSI/ANS-8.7, <i>Guide for Nuclear</i></li> </ul>	DOE-STD-1183 #23	3 Lower level suggested.	4 Higher level suggested.

<p><i>Criticality Safety in the Storage of Fissile Materials</i></p> <ul style="list-style-type: none"> <li>• ANS-8.15, <i>Nuclear Criticality Control of Special Actinide Elements</i></li> <li>• ANS-8.19, <i>Administrative Practices for Nuclear Criticality Safety</i></li> </ul> <p>(Competency #23)</p>			
<p>X. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the following DOE Orders, technical standards, and Guides:</p> <ul style="list-style-type: none"> <li>• DOE-STD-3011-2002, <i>Guidance for Preparation of Basis for Interim Operation (BIO) Documents</i></li> <li>• DOE-STD-3014-96, <i>Accident Analysis for Aircraft Crash into Hazardous Facilities</i></li> <li>• DOE-STD-1120-2005, <i>Integration of Environment, Safety, and Health into Facility Dispositions Activities</i></li> <li>• US NRC Guide 1.70, <i>Standard Format and Content of Safety Analysis Reports of Nuclear Power Plants</i></li> <li>• 29 CFR 1910.120, <i>Safety and Health Programs, Work Plans, Health and Safety Plan</i></li> <li>• DOE-STD-1163-2003, <i>Integration of Multiple Hazard Analysis Requirements and Activities</i></li> <li>• DOE-NA-STD-3016-2006, <i>Hazard Analysis Reports for Nuclear Explosive Operations</i></li> <li>• DOE O 460.1B, <i>Packaging and Transportation Safety</i></li> <li>• DOE G 460.1-1, <i>Packaging and Transportation Safety</i></li> <li>• DOE O 461.1A, <i>Packaging and Transfer or Transportation of Materials of National Security Interest</i></li> <li>• DOE M 461.1-1 CHG 1, <i>Packaging and Transfer of Materials of National Security Interest Manual</i></li> <li>• Secretary of Energy Notice (SEN) SEN-35-91, <i>Nuclear Safety Policy</i></li> </ul> <p>(Competency #24)</p>	DOE-STD-1183 #24	3	4
<p>Y. Nuclear safety specialists shall demonstrate a familiarity level knowledge of the Price-Anderson Amendments Act of 1988 and its relationship to Subparts A and B of 10 CFR 830. (Competency #25)</p>	DOE-STD-1183 #25	3 Lower level suggested.	5

<p>Z. Nuclear safety specialists shall demonstrate a working level knowledge of the requirements in DOE technical standard DOE-STD-3009-94, <i>Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis</i>, and DOE-STD-3010-94, <i>Airborne Release Fractions/Rates and Respirable Fractions for Nonreactor Nuclear Facilities</i>. (Competency #26)</p> <p><b>Mandatory Performance Activities: Participate on a combination of at least 2 safety basis documents or amendment reviews and/or review of safety basis documents whose scope includes evaluation of the development of a source term or radiological dose consequence.</b></p>	DOE-STD-1183 #26	5	2
<p>AA. Nuclear safety specialists shall demonstrate a working level knowledge of DOE-STD-1186-2004, <i>Specific Administrative Controls</i>, with respect to its impact on the Department's nuclear safety. (Competency #27)</p>	DOE-STD-1183 #27	5	3
<p>BB. Nuclear safety specialists shall demonstrate a working level knowledge of assessment techniques (such as the planning and use of observations, interviews, and document reviews) to assess facility performance, report results of assessments, and follow up on actions taken as the result of assessments. (Competency #28)</p>	DOE-STD-1183 #28	3	5
<p>CC. Nuclear safety specialists shall demonstrate a working level knowledge of the DOE facility contract provisions necessary to provide oversight of a contractor's operations. (Competency #29)</p>	DOE-STD-1183 #29	1 Higher level suggested.	5
<p>DD. Nuclear safety specialists shall demonstrate a familiarity level knowledge of problem analysis principles and the techniques necessary to identify problems, potential causes, and corrective action(s) associated with nuclear safety issues at DOE nuclear facilities. (Competency #30)</p>	DOE-STD-1183 #30	2	5
<p>EE. Nuclear safety specialists shall demonstrate a familiarity level knowledge of DOE Policy 450.4, <i>Safety Management System Policy</i>; Policy 226.1A, <i>Department of Energy Oversight Policy</i>; and DOE O 226.1, <i>Implementation of Department of Energy Oversight Policy</i>, as applied to nuclear safety. (Competency #31)</p>	DOE-STD-1183 #31	3	5

**Conclusions:** The “need at entry scale” does not easily factor into the level of importance of the competency. Some competencies (understanding HA and AA) will take time to attain required level of knowledge and have mandatory performance activities that also require time to complete.

The difference in the importance level of competencies centers on what each individual interprets as their responsibilities. Example: Competencies associated with radiation monitoring, biological effects of radiation, and other topics in the health physics area were thought of as not needed as there are Health Physics SMEs that address these topics. A similar situation occurred with competencies associated with criticality. There are criticality SMEs that cover this area. However, competencies associated with design reviews (e.g., understanding electrical logic diagrams) seemed to be considered more important. It is clear that there is not uniformity in what each individual assigned to the safety basis functional area understands as their set of responsibilities/competencies needed to perform in the area.

**Instructions for Step 3 - Evaluate linkage between tasks and competencies:**

*This step demonstrates that there is a clear relationship between the tasks performed on the job and the competencies required to perform the tasks.*

- Evaluate each competency for its importance in effective performance of each task.
- When finished, verify that each competency is important to the performance of at least one task.

**Linkage Scale**

How important is this competency for effective task performance?

- 0 = N/A or Not Important
- 1= Minimally Important
- 2 = Somewhat Important
- 3 = Important
- 4 = Very Important
- 5 = Extremely Important
- N/A = Not Applicable

**Preliminary Results for Step 3:**

**Job Analysis Worksheet For Task And Competency Linkage**

DOE-STD-1183-2007 identifies 11 items under duties and responsibilities. I have added two new items. Total number of tasks is 13.

DOE-STD-1183-2007 identifies a total of 31 competencies.

Task Number	Competency Letter															
	A #1	B #2	C #3	D #4	E #5	F #6	G #7	H #8	I #9	J #10	K #11	L #12	M #13	N #14	O #15	P #16
1	3	4	4	5	5	4	3	1	1	2	0	4	4	4	5	5
2	0	1	1	3	2	0	2	1	0	0	0	1	1	1	2	1
3	0	0	0	3	3	0	0	1	0	0	0	0	0	0	3	3
4	0	3	3	3	3	0	3	3	3	3	0	3	2	3	1	1
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	4	4	0	2	0	0	0	0	0	3	0	4	5
7	0	0	0	5	5	2	1	0	0	0	0	0	3	0	5	4
8	0	0	0	3	3	0	0	0	0	0	0	0	0	0	3	3
9	0	3	3	3	3	3	3	2	0	0	0	3	4	3	3	3
10	0	3	3	2	3	0	3	0	0	0	0	2	3	3	3	2
11	0	1	1	5	3	3	3	1	1	1	0	3	3	1	3	4
12 (added)	0	3	3	5	5	4	4	1	2	3	0	3	4	3	3	5
13 (added)	0	3	3	5	5	4	4	1	2	2	0	3	4	3	5	5

Task Number	Competency Letter														
	Q #17	R #18	S #19	T #20	U #21	V #22	W #23	X #24	Y #25	Z #26	AA #27	BB #28	CC #29	DD #30	EE #31
1	4	4	4	5	5	0	3	3	3	5	4	3	1	0	1
2	3	3	3	4	1	0	1	2	3	3	3	2	1	0	2
3	2	2	3	3	3	0	1	2	5	2	2	3	4	0	3
4	4	0	5	0	0	0	2	1	2	2	1	1	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	5	4	4	4	5	0	2	3	4	4	3	5	1	2	3
7	5	3	4	4	4	0	2	3	4	4	4	2	0	1	1
8	2	2	3	3	3	0	2	3	3	3	3	5	2	2	2
9	0	2	1	3	3	0	3	2	3	2	3	3	0	3	0
10	0	0	0	4	0	0	3	1	1	1	3	3	2	0	0
11	1	3	3	3	3	1	3	3	3	3	3	2	1	1	3
12 (added)	5	3	5	3	0	0	2	2	3	3	3	3	0	0	0
13 (added)	5	3	5	5	0	0	3	3	1	4	3	3	0	0	0

Note:

Task #10 involves participating in emergency response activities. This is not normally part of the duties/responsibilities assigned to safety basis staff. However, if involved in an emergency response activity knowledge of 10 CFR 835 controls and crit alarms is required, i.e., evacuation procedure.

Matching competencies with tasks:

<b>High Level of Importance Tasks</b>	<b>High Level of Importance Competencies</b>
#1 – nuclear safety (Rule Implementation) #7 – interpretation of nuclear safety requirements #13 – identification of safety controls (new)	#4- nuclear safety terminology, #5- HA and AA, #12- radioactivity & transformation mechanisms, #14- radiological monitoring, #15- DSA, #16- SERs, #18- Hazard Categorization, #20- TSRs, #21- USQs, #26- DOE-STD-3009, #27- SACs
#6- communicating nuclear safety issues	
#12- DOE-STD-1189 (new) #4 – performance of design reviews	#17- PDSA #19- DOE O 420.1B #7 – HVAC knowledge #8 – process instrumentation #9 – P&IDs #10 – electric diagrams #11 – electric logic
<b>Medium Level of Importance Tasks</b>	<b>Medium Level of Importance Competencies</b>
#2- implementation of ISM #3 – PAAA #8 – self assessments	#25- PAAA #28- assessments #31- DOE Policy 450.4, Policy 226.1A, and DOE O 226.1
#11 – maintain expertise	#1- fission process #2- internal/external dosimetry #3- criticality control #6- PRA knowledge #13- biological effects of radiation #23- criticality ANSI/ANS standards #24- other DOE Orders/standards/guides
<b>Low Level of Importance Tasks</b>	<b>Low Level of Importance Competencies</b>
#5- uncertainties – low	?
#9- accident investigation	Could be linked with #28 assessments #30 – problem analysis
#10- participate in emergency response	<b>None</b>

The following competencies were not matched up with specific tasks:

- #22 – design requirements for computer codes
- #29 – contract provisions