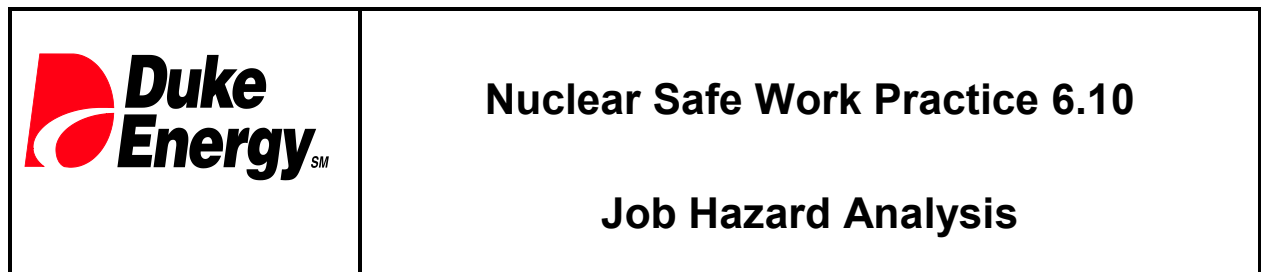


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1.0 PURPOSE/SCOPE

This nuclear safe work practice (NSWP) provides guidance for execution of the Job Hazard Analysis (JHA) process. The purpose of the JHA process is to provide teams with a means to perform a critical review of their work activities and evaluate the personal safety risk associated when performing these activities. The JHA process applies to work tasks/activities with low to medium personal safety level risk. Work activities with elevated personal safety risk are identified and evaluated with the "SA" Special Emphasis Planning Code and are not considered in the JHA process. The JHA process is to be used to support and develop the personal safety portion of the Pre Job Briefing process described in NSD 130. If necessary, the JHA process may be suspended for emergent work or emergency situations.

2.0 DEFINITIONS

1. High Consequences - when the potential exists for personnel fatalities, or a toxic release with substantial adverse impact to the public or employees.
2. Medium Consequences - when significant potential exists for personnel injury with corresponding lost work time or a toxic release with substantial adverse impact to the public or employees.
3. Moderate Consequences - when significant potential exists for a serious injury and minimal potential for toxic release that may have an adverse impact to the public or employees.
4. Low Consequences - when there is minimal potential for personnel injury or toxic release.
5. Frequent Exposure - when consistent exposure to the hazard exists during the complete duration of the task.
6. Likely Exposure - when exposure to the hazard is expected to occur several times during the task.
7. Occasional Exposure - when a potential exist for exposure to the hazard once during the task.
8. Seldom Exposure - when the possibility for exposure to the hazard is considered remote and exposure is not expected during the duration of the task.
9. Risk Level - Numerical value assigned to a task during the JHA that indicates the risk of the task considering hazard probability and severity of consequences. Risk level values will range from 1 to 4. A risk level value of 1 is the most severe and a value of 4 is the least severe

3.0 Roles and Responsibilities

1. Execution group manager shall be responsible for the following:
 - a) Assisting with evaluation of activities determined to be Risk Level 1 in the JHA process.
 - b) Ensure the JHA process is being utilized within their department.

2. First Line Supervisor / designee shall be responsible for:
 - a) Reviewing the "T-5" work schedule and performing the Job Hazard Analysis evaluation as described in ([Section 1](#)) of this safe work practice.
 - b) Ensuring information in the JHA is incorporated into work activity Pre Job Briefings.
 - c) Ensuring work activities are performed in compliance with the JHA Personal safety requirements.
 - d) Ensuring that completed JHA documentation forms are filed in the JHA database accessed through the site EHS Homepage.

3. Planners shall be responsible for:
 - a) Ensuring work orders identified by team supervisors are coded with the special emphasis code for job hazard analysis (JH). This code will tie the JHA documentation form to the current and future task plans for this activity.
 - b) Reviewing JHA information submitted by teams on the Post Job Analysis feedback panels in Nuclear Asset Suite (NAS) for updating model work orders for future or similar activity plans with the JH code.

4. Environmental Health and Safety Manager (EHS) shall be responsible for:
 - a) Ensuring EHS assistance is provided as needed for completion of the JHA.
 - b) Maintaining a library of completed JHA forms.
 - c) Performing a review of completed JHA forms to identify process compliance and effectiveness as well as emerging trends or safety focus areas for the site.

5. Individuals executing work shall be responsible for:
 - a) Understanding applicable JHA expectations prior to execution of work activities. (*Initial the "User Initials" section of the JHA documentation form as part of the PJB review*)
 - b) Executing work activities in compliance with JHA requirements.
 - c) Stopping work if JHA requirements are determined not effective.
 - d) Providing feedback to work control planning through use of the Nuclear Asset Suite (NAS) Post Job analysis feedback panels to update model work orders when a JHA evaluation has been performed and is on file.

4.0 **SECTIONS**

1. [Job Hazard Analysis Process](#)
2. [JHA Process Flow Chart](#)
3. [JHA Training](#)
4. [JHA Audit](#)
5. [JHA Hazard Analysis Job Aid](#)
 - a. Identification of Hazards
 - b. Mitigating Actions
6. [Risk Assessment Matrix](#)
7. [JHA Documentation Form](#)

Section 1 - Job Hazard Analysis Process

1. Description of the Job Hazard Analysis (JHA) Process

Job Hazard Analysis is the process of identifying accident and health risk before exposure occurs, evaluating the risk, and applying mitigating action to eliminate or reduce the risk to acceptable levels. A single JHA can be used to group related work task / activities with similar risks. The JHA applies a process for Risk Management as follows. *Refer to the flow chart [\(Section 2\)](#) to perform the following risk analysis.*

- a) Identify the Individual Tasks -

- 1) During the T-5 schedule review team supervisors or their designee will:

- Select at a minimum two (2) per week work activities to be evaluated using the JHA process. This new selection should not include similar activities or activities previously evaluated.
- Identify work activities on schedule that have been previously evaluated and have a JHA and on file.
- Notify Work Control Planning of the tasks selected above with instructions to code these selected tasks with the JH Special Emphasis Code.
 - This step is not applicable to work activities not managed through NAS-for example activities performed by Ops, CHM, RP or groups who perform activities outside of NAS.

- b) Perform the Job Hazard Analysis evaluation:

- 1) During the team's final work package or schedule readiness review

- Print the JHA documentation forms from the work order task package for task managed through NAS or from the EHS share-point/website for all other activities.
- Evaluate personal safety risk for each identified work activity as follows:

- A. Perform all documentation on the "Job Hazard Analysis Documentation form [\(Section 7\)](#). The JHA documentation form shall be used to provide detailed information documenting the hazards identified and response to be taken to mitigate identified risk. This form does not

need to be retained for activities with Level 4 risk. For activities with Level 1-3 risk, the form must be retained. Regardless of risk level information derived from the JHA evaluation shall be incorporated into the Pre-Job Briefing process described in NSD 130.

- B. Initial JHA Form Documentation
- In the form field "Initial JHA Date" enter the date the new JHA is created.
 - In the form field "JHA Review Date" enter the date the JHA is reviewed or updated for applicability to current scheduled work activity.
 - Document the general information about the work activity on the JHA documentation form in the spaces provided.
- C. Break the work activity down into the individual steps required to complete the activity. When identifying the individual steps give consideration to the travel paths, worksite, the facility, equipment, materials and work processes utilized to complete the work activity. List the individual actions or steps to be completed in the activity on the in the "Individual steps" section of the documentation form.
- D. Identify the Associated Hazards - Utilize ["Job Hazard Analysis Job Aid"](#) Section 5 to identify hazards the crew may be exposed to. The "Identify Hazards" section of this attachment provides a list of Hazards that may be applicable. Hazards not listed can also be documented in this section.
- E. Identify Mitigating Actions - Eliminate or reduce the exposure to the hazard by identifying necessary mitigating actions. The "Mitigating Actions" section of the JHA Job Aid provides a list of possible strategies that may be used. Any strategies not listed should also be documented.
- F. Evaluate the Risk Level - Use the ["Risk Assessment Matrix"](#) Section 6, to identify the level of risk for each hazard identified. Assess the level of risk based on the severity of the consequences and frequency of exposure to the hazard including the effect of the mitigating actions. Assign a risk level of 1 to 4 after each activity has been evaluated and the mitigating actions have been determined (1 being the most severe and 4 the least severe).
- If the most severe risk level is 4 no additional actions are required per this NSWP. Team should perform a pre job briefing and take-a-minute prior to beginning work.
 - If the risk level is 3 in the activity, complete the JHA documentation form and retain the form for use with the execution of the activity. The JHA should be incorporated into the pre-job briefing and cover all risk and mitigating strategies identified, in the JHA.

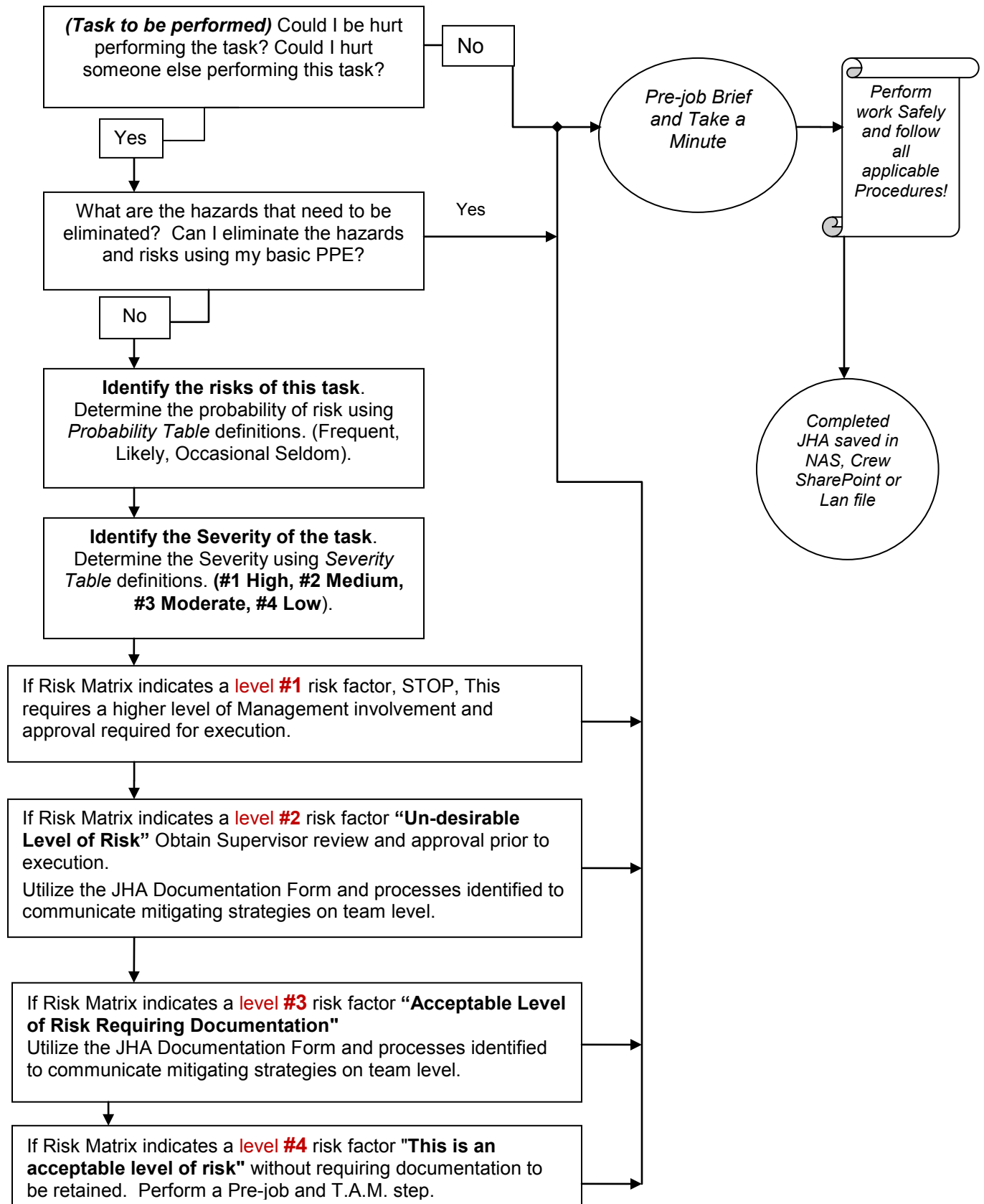
- If the risk level is 2 in the activity, complete the JHA documentation form obtain management approval signature and retain the form for use with the execution of the activity. The JHA should be incorporated into the pre-job briefing and cover all risk and mitigating strategies identified, in the JHA.
- If the risk level is 1 in the activity, STOP contact management and re-evaluate the performance of the task. This requires a higher level of Management involvement and approval required for execution. Complete the JHA documentation form and include the information in the written pre-job brief.
- The most severe risk rating will determine the overall rating for the job.

G. Archiving JHA Information -

- Job Hazard Analysis information documented with a Work Order task should be saved to the JHA Database accessed through the site EHS Homepage.
- Work Control Planning will place the JH Special Emphasis Code on work order task covered by archived JHA information into new work order tasks that have been identified by teams using the Post Job Analysis feedback panel in NAS.
- JHA Documentation forms not associated with work order task (those used to support work activities) shall be retained by the initiating group for future use or reference with similar work activities.
- A copy of completed JHA's shall be sent to EHS to be archived for future use and audits

Section 2 - Job Hazard Analysis 'JHA' Process Flow Chart

1. Break each job down into tasks. Take each task through the following flow chart.
2. Tasks associated with jobs can have different levels of hazard ranking and mitigation.
3. Completed JHA's are to be saved by each team performing the JHA for reference.



Section 3 - JHA Training

Employees who are actively involved in executing work activities will receive classroom training. Employees who perform work execution support or administrative functions will receive DART training.

Section 4 - JHA Audit

Each department will be responsible for performing an annual audit of JHAs completed in their department. The audit will be performed on a population of JHAs that is considered to be representative of the department. The results of the audit will be reported to the EHS manager. The audit will include a review of the following.

- Individual tasks were documented effectively.
- Required mitigating actions were documented effectively.
- Processes were identified to drive the mitigating action when required.

Section 5 - JHA Hazard Analysis Job Aid

A. IDENTIFY HAZARDS

Identify the hazards to which the crew might be exposed and Risk Level Rating. Check all that apply:

(ie Open Hole 2)

- | | |
|---|--|
| <input type="checkbox"/> Hand Hazards | <input type="checkbox"/> Electricity / Arc Flash |
| <input type="checkbox"/> Pinch Points | <input type="checkbox"/> Open Hole |
| <input type="checkbox"/> Trip / Slip Hazards | <input type="checkbox"/> Overhead Hazards |
| <input type="checkbox"/> Head Hazards | <input type="checkbox"/> Chemicals |
| <input type="checkbox"/> Bump Hazards | <input type="checkbox"/> Radiological |
| <input type="checkbox"/> Confined Spaces | <input type="checkbox"/> Poisonous or Asphyxiating Gases |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Air Blast |
| <input type="checkbox"/> Extreme Temperatures | <input type="checkbox"/> Ignition Sources |
| <input type="checkbox"/> Hot Surfaces | <input type="checkbox"/> Spills |
| <input type="checkbox"/> Flammable Liquids or Gases | <input type="checkbox"/> Stored Energy |
| <input type="checkbox"/> Chips Slivers | <input type="checkbox"/> Unguarded machinery |
| <input type="checkbox"/> Falls from Height | <input type="checkbox"/> Airline / Hydraulic Lines / Water Lines |
| <input type="checkbox"/> Lifting | <input type="checkbox"/> Uneven Working / Walking Surfaces |
| <input type="checkbox"/> Eye Hazard / Projectile / Grinding | <input type="checkbox"/> Other |
| <input type="checkbox"/> Moving Parts | |

B. Mitigating Actions

Identify required mitigating actions. Check all that apply

- | | |
|---|--|
| <input type="checkbox"/> PPE Gloves | <input type="checkbox"/> Ignition Source Controls |
| <input type="checkbox"/> Physical Barrier | <input type="checkbox"/> Lockout-tag out / WOTA required |
| <input type="checkbox"/> Signage | <input type="checkbox"/> MSDS Review |
| <input type="checkbox"/> PPE Hardhat / Chin Strap | <input type="checkbox"/> Personnel Resource Adequate |
| <input type="checkbox"/> Elimination of the hazard | <input type="checkbox"/> Eye Wash Shower |
| <input type="checkbox"/> PPE Hearing Protection | <input type="checkbox"/> IDLH Monitoring Device |
| <input type="checkbox"/> Engineering Controls | <input type="checkbox"/> PPE for hazardous chemicals |
| <input type="checkbox"/> Administrative Controls / Procedures | <input type="checkbox"/> Explosive Monitoring Devices |
| <input type="checkbox"/> Designated Safety Shower | <input type="checkbox"/> Respirator / SCBA |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Confined Space Permit |
| <input type="checkbox"/> Fire Fighting Equipment | <input type="checkbox"/> Emergency Evacuation Route Identified |
| <input type="checkbox"/> Hatch Watch | <input type="checkbox"/> Spill Control |
| <input type="checkbox"/> PPE Eye Protection | <input type="checkbox"/> Training adequate for this task |
| <input type="checkbox"/> Hot-work permit required | <input type="checkbox"/> Other |
| <input type="checkbox"/> PPE Footwear | |

Section 6 - Risk Assessment Matrix

		HAZARD PROBABILITY			
		Frequent	Likely	Occasional	Seldom
S E V E R I T Y of C O N S E Q U E N C E	High	1	1	1	2
	Medium	1	2	2	3
	Moderate	2	3	3	4
	Low	3	4	4	4

Risk Level	Required Action
1	<ul style="list-style-type: none"> ●STOP! Unacceptable Risk Level ●Higher level of department management involvement and approval required for execution.
2	<ul style="list-style-type: none"> ●Undesirable Risk Level ●Obtain Supervisor review and approval prior to execution. ●Utilize the JHA Documentation Form and processes identified to communicate mitigating strategies on team level.
3	<ul style="list-style-type: none"> ●Acceptable Risk Level ●Utilize the JHA Documentation Form and process identified to communicate mitigating strategies on team level.
4	<ul style="list-style-type: none"> ●Acceptable Risk Level without JHA Documentation Form. ● Utilize processes identified to communicate mitigating strategies on team level.

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- Low Consequences - when there is minimal potential for personnel injury or toxic release.
- Frequent Exposure - when consistent exposure to the hazard exists during the complete duration of the task.
- Likely Exposure - when exposure to the hazard is expected to occur several times during the task.
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- Risk Level - Numerical value assigned to a task during the JHA that indicates the risk of the task considering hazard probability and severity of consequences. Risk level values will range from 1 to 4. A risk level value of 1 is the most severe and a value of 4 is the least severe.

DUKE ENERGY JOB HAZARD ANALYSIS

Section 7 - JHA Documentation Form

JOB HAZARD ANALYSIS		JOB TITLE		Team #	Supervisor	JHA Creator	Reviewer	Comments		
		Site, Unit, Bldg., elevation, room		W/O - Task - Procedures		System / Equipment / Component				
Initial JHA Date	JHA Review date	List actions to be completed: (Break job down by the steps involved to complete the activity)	List all potential hazards and human error traps for each step. Include risks involved with access to work location! (Fall Prevention, etc.)	Preventative work practices and hazard control measures to be used. Contact EH&S if hazards are not eliminated or controlled. List O.E. and Safe Work Practices reviewed.			Additional PPE Needs	Risk Matrix Rating #	User Initials	

		HAZARD PROBABILITY			
		Frequent	Likely	Occasional	Seldom
C O N S E Q U E N C E S	High	1	1	1	2
	Medium	1	2	2	3
	Moderate	2	3	3	4
	Low	3	4	4	4

Severity	Level of Risk
1	UNACCEPTABLE RISK: STOP! Higher level of department management involvement and approval required for execution.
2	Undesirable Risk: JHA and Supervisor approval required.
3	Acceptable Risk: Use JHA & Pre-Job Brief on Team level
4	Acceptable level of "Low Risk". Perform Take-A- Minute, pre-job brief and perform work safely and to appropriate procedures.

Supervisor or designee signature: _____ Date: _____

DUKE ENERGY JOB HAZARD ANALYSIS

JOB HAZARD ANALYSIS		JOB TITLE		Team #	Supervisor	JHA Creator	Reviewer	Comments		
		Site, Unit, Bldg., elevation, room		W/O - Task - Procedures		System / Equipment / Component				
Initial JHA Date	JHA Review date	List actions to be completed: (Break job down by the steps involved to complete the activity)	List all potential hazards and human error traps for each step. Include risks involved with access to work location! (Fall Prevention, etc.)	Preventative work practices and hazard control measures to be used. Contact EH&S if hazards are not eliminated or controlled. List O.E. and Safe Work Practices reviewed.			Additional PPE Needs	Risk Matrix Rating#	User Initials	

Supervisor or designee signature: _____ Date: _____