



## NMP-AD-035

## ALARA Program

VERSION 1.11

### Special Considerations:

Applicable to Corporate, FNP, HNP, VEGP 1-2, VEGP 3-4

PROCEDURE LEVEL OF USE CLASSIFICATION PER NMP-AP-003	
CATEGORY	SECTIONS
Continuous	NONE
Transient Response	NONE
Reference	NONE
Information	ALL

Approval: \_\_\_\_\_ James Carswell  
Approved By

05/12/2022  
Date

\_\_\_\_\_  
RADIATION PROTECTION  
Responsible Department

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<b>VERSION SUMMARY</b>
<p><b>PVR 1.9</b></p> <p><b>DESCRIPTION</b></p> <p>Added clarification that this NMP is the administrative level procedure for the Fleet ALARA program and that specific details for performance of the various actions are located in implementation procedures. Updated R-Types referenced in the procedure. Added references to ALARA reports and PARC Minutes. Added location for PARC meeting template. Added clarification to Section 3.4 to the information that may be included in the Annual ALARA report and the Outage Summary Report. Added a note to Section 3.9 to clarify what constitutes an alternate. Added clarification to section 4.0 detailing when a formal ALARA Strategic Dose Reduction Plan is required.</p>
<p><b>PVR 1.10</b></p> <p><b>DESCRIPTION</b></p> <p>Added clarification to how a quorum is met to Section 3.9 step 1 as requested in CR 10723248.</p>
<p><b>PVR 1.11</b></p> <p><b>DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>The following changes were initiated by TE 1097133; <ul style="list-style-type: none"> <li>Removed Work Management Director from section 3.9 step 1 first bullet. Position no longer exists.</li> <li>Removed Work Management from quorum. Work Management falls under Maintenance (online work) and Plant Mgr (outage work).</li> </ul> </li> </ul>

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<b>1.0</b>	<b><u>PURPOSE/SCOPE/APPLICABILITY</u></b> (COMTA 2480, 3343)		
<b>1.1</b>	<b>PURPOSE</b>		
	<ol style="list-style-type: none"> <li>1. This procedure establishes the As Low As Reasonably Achievable (ALARA) policy and provides the administrative guidelines to implement and maintain a program for keeping occupational radiation exposures ALARA.</li> <li>2. This NMP is the administrative level procedure for the Fleet ALARA program. Specific details for performance of the various actions are located in implementation procedures.</li> <li>3. The ALARA concept <u>SHALL</u> be incorporated into the operation of the site to ensure that these exposures <u>SHALL</u> be ALARA.</li> <li>4. The intent of the ALARA Program is to emphasize to all personnel that ALARA is inseparable from daily operation and good Radiation Protection (RP) practices.</li> <li>5. The objective of the ALARA Program is to maintain radiation exposures at the lowest practical level for the following: <ul style="list-style-type: none"> <li>• the annual dose to individuals working at any Southern Nuclear Company (SNC) site</li> <li>• the collective dose to all individuals working at any SNC site</li> <li>• the collective dose to the general public.</li> </ul> </li> </ol>		
<b>1.2</b>	<b><u>APPLICABILITY</u></b>		
	<ol style="list-style-type: none"> <li>1. This procedure applies to site and corporate personnel as guidance concerning the ALARA Program.</li> <li>2. This procedure will be implemented incrementally at VEGP 3-4 as sections become applicable to the activities being performed by the Operational Readiness Organization and the Construction Organization.</li> </ol>		
<b>2.0</b>	<b><u>DEFINITIONS</u></b>		
	<ol style="list-style-type: none"> <li>1. <b>ALARA</b> – As Low As Reasonably Achievable, defined in 10 CFR 20.1003, represents a process that ensures every reasonable effort is made to maintain exposures to radiation as far below dose limits as is practical, taking into account the state of technology, the economics of improvements and benefits to the public health and safety.</li> <li>2. <b>Cost Benefit Evaluation</b> – A method for performing evaluations of the benefits derived from implementing exposure reduction measures as compared to the associated cost.</li> </ol>		

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<p><b>3.0      <u>RESPONSIBILITIES</u></b> (COMTA 2480, 3346, 3343, 3345)</p> <p>All individuals <u>SHALL</u> <b>perform</b> their duties in a manner that contributes to ALARA, is procedurally compliant, reduces operating costs and targets, and supports fleet standards.</p> <p>Site management and supervision <u>SHALL</u> 1) <b>provide</b> timely and continuing monitoring of activities to verify that the day-to-day operating activities are conducted ALARA; 2) <b>ensure</b> activities are performed in accordance with applicable standards; <u>AND</u> 3) <b>report</b> gaps to excellence.</p> <p>Corporate and site management <u>SHALL</u> <b>identify</b> and <b>accomplish</b> performance improvements which contribute to ALARA , <b>support</b> cost savings and targets, <u>AND</u> <b>champion</b> initiatives for gap closure to drive industry best performance and fleet standardization.</p> <p><b>3.1      PLANT MANAGER</b></p> <ul style="list-style-type: none"> <li>• <b>Provides</b> direction to ensure the commitment to an effective ALARA Program by all personnel</li> <li>• <b>Chairs</b> the Plant ALARA Review Committee (PARC)</li> </ul> <p><b>3.2      RADIATION PROTECTION MANAGER</b> (COMTA 3270, 3273)</p> <ul style="list-style-type: none"> <li>• <b>Provides</b> direction to ensure the commitment to an effective ALARA Program by all personnel</li> <li>• <b>Ensures</b> the implementation of the ALARA Program</li> <li>• <b>Reviews</b> site operations and maintenance activities and philosophies to identify areas and methods to improve the ALARA Program</li> <li>• <b>Reviews, comments on, and recommends</b> changes in job procedures, WOs, etc., to maintain exposures ALARA</li> <li>• <b>Ensures</b> the RP staff understands and exercises their authority to stop any work activity deemed radiologically unsafe</li> <li>• <b>Ensures</b> design reviews of facilities and equipment impacting radiation exposure are reviewed for ALARA considerations</li> <li>• <b>Ensures</b> a job exposure tracking system is maintained to allow assessment of the ALARA Program’s effectiveness in reducing personnel radiation exposures</li> <li>• <b>Ensures</b> the ALARA concept is integrated into training programs</li> <li>• <b>Ensures</b> radiation exposure goals are established, trended, and recommendations made concerning performance against those goals</li> <li>• <b>Ensures</b> industry benchmarking is performed that validate station ALARA methods are aligned with industry best practices</li> </ul>		

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<div> <b>3.3 DEPARTMENT DIRECTORS</b> (COMTA 3270) </div> <div> <ul style="list-style-type: none"> <li>• <b>Serve as</b> members of the Plant ALARA Review Committee (PARC)</li> <li>• <b>Ensure</b> department personnel participate in pre and post-job ALARA reviews and other ALARA meetings as appropriate</li> <li>• <b>Ensure</b> radiation workers under their direction maintain their exposure ALARA</li> <li>• <b>Ensure</b> their respective department plans and executes radiological work ALARA</li> <li>• <b>Promote</b> continuous improvement through process, program, and/or design improvements. <b>Exhibit</b> a heightened awareness of the ALARA principle by questioning the status quo, seeking process, program or design improvements ensuring radiological work is planned and executed ALARA.</li> <li>• <b>Implement</b> approved ALARA recommendations</li> <li>• <b>Ensure</b> items identified in pre-job reviews are available for use and implementation when the job begins</li> <li>• <b>Communicate</b> the expectation that workers under their direction document radiological concerns</li> <li>• <b>Designate</b> department personnel to evaluate and resolve ALARA deficiencies</li> </ul> </div> <div> <b>3.4 RP OPERATION SUPT AND RP TECHNICAL SUPPORT SUPT</b> (COMTA 3346) </div> <div> <ul style="list-style-type: none"> <li>• <b>Implements</b> the ALARA Program</li> <li>• <b>Maintains</b> the ALARA Strategic Plan as necessary</li> <li>• <b>Keeps</b> management informed on the ALARA Program's effectiveness and current status relative to the program's goals and objectives</li> <li>• <b>Ensures</b> timely ALARA pre-job, post-job, design and modification reviews are performed and properly documented as required in NMP-HP-204.</li> <li>• <b>Interfaces</b> with plant personnel to coordinate, review and develop ALARA plans for specific work evolutions</li> <li>• <b>Coordinates</b> ALARA planning with outage and scheduling personnel</li> <li>• <b>Ensures</b> that PARC meeting minutes, as appropriate, are recorded and sent for document retention</li> <li>• <b>Develops</b> reports for distribution to plant and corporate management</li> <li>• <b>Ensures</b> the Annual ALARA Report is completed within 120 days of the first day of the new year. Annual ALARA Reports <b>MAY</b> include as appropriate, but is not limited to, the following elements;</li> </ul> </div>		

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3.4
RP OPERATION SUPT AND RP TECHNICAL SUPPORT SUPT (COMTA 3346) (continued)

- A statement similar to the following, “This report, in part, documents the requirement of 10 CFR 20.1101(c). The licensee SHALL periodically (at least annually) **review** the radiation protection program content and implementation.”
- Summary of Major Work Activities
- Dose goals and deltas
- PCEs (total and a summary of any  $\geq$  level 2 PCEs)
- Radiological Lessons Learned and Challenges
- Dose and (unplanned) dose rate alarms
- Radioactive Material Events
- NRC violations
- INPO/WANO Information
- **Ensures** that Outage ALARA Summary Reports are completed within 120 days of the end of the outage. Outage ALARA Summary Reports **MAY** include as appropriate, but is not limited to, the following elements;
  - Outage Summary of Major Work Activities
  - Outage dose goals and deltas
  - Emergent Dose
  - BRAC/SRMP Data and Survey Dose Rate Comparisons
  - PCEs (total and a summary of any level 2 and level 3 PCEs)
  - Radiological Lessons Learned and Challenges
  - Dose and (unplanned) dose rate alarms
  - Radioactive Material Events
  - Outage lessons learned
  - NRC violations
- **Screens** ALARA Suggestions for applicability and resolution

3.5
RP SUPERVISORS

- **Ensure** radiological surveys required for ALARA job reviews are performed
- **Conduct** radiological worker observations
- **Assess** contamination and exposure control methods
- **Evaluate** individual and team radiological exposures

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### 3.6 TRAINING MANAGER

**Provides** the necessary resources and training to assure personnel are trained in ALARA Program requirements.

### 3.7 SITE SUPERVISION (COMTA 3337, 3270)

**Ensures** that all personnel under their direction:

- Comply with all rules, regulations, and procedures governing radiation safety
- Are briefed and aware of the instructions and radiological controls for the job and have received any special training necessary before starting the job
- Know the location and extent of radiological hazards in assigned areas and perform work ALARA
- Maintain awareness of both employee and department exposure status as compared to established goals
- Ensure the necessary specifics (projected man-hours, work locations, etc.) of upcoming radiological work are conveyed to RP Planners by the scope freeze date per procedure NMP-OM-001, Refueling Outage Management
- Monitor the radiological status of on-going work and communicates to Radiation Protection any challenges to meeting established goals
- Participate in ALARA pre and post-job reviews, and ALARA design reviews as required

### 3.8 PLANT PERSONNEL (COMTA 3270)

All plant personnel should:

- Be cognizant of their current exposure status
- Remain knowledgeable of radiological conditions in their work area
- Stops work and exits area immediately when instructed by RP personnel
- Maintain their exposures ALARA by the use of good radiological work practices and following RP instructions
- Discuss exposure reduction ideas with RP and their supervisory personnel
- Submit ALARA suggestions to improve work conditions and achieve ALARA goals

### 3.9 PLANT ALARA REVIEW COMMITTEE (PARC) (COMTA 3270)

#### NOTE

Individuals are designated as alternates IF the position holder (e.g. Site V.P) is on site but cannot attend the meeting. If the position holder is not on-site and another individual is designated to fill that position, either organizationally or in writing, that individual IS NOT considered an alternate.



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### 3.9 PLANT ALARA REVIEW COMMITTEE (PARC) (COMTA 3270) (continued)

1. The composition of the PARC is as follows:

- Chairperson: Plant Manager  
Alternates are Site Vice President, Engineering Director, Operations Director or Maintenance Director.
- Members All Department Directors and RP and Chemistry Managers  
Alternates are Department Director direct reports
- Quorum Chairperson and members from the following departments (2 of which can be alternates): Radiation Protection, Engineering, Operations and Maintenance.  
  
Quorum is met when the director, designee or alternate for the PARC Chair and each voting department is present (one individual may not represent two positions).

2. The PARC normally meets quarterly, as a minimum, and has the following responsibilities:

- **Establishes** specific ALARA goals, objectives, and recommends exposure reduction techniques
- **Reviews** ALARA suggestions that require management resolution
- **Compares** station ALARA performance with industry best AND **develops** action plans to close identified gaps.
- With the exception of routine activities, the PARC **approves** dose estimates for the following:
  - Non-outage Radiation Work Permits estimated to accumulate more than 1 person-rem
  - Outage Radiation Work Permits estimated to accumulate more than 3 person-rem
  - Other Radiation Work Permits as requested by Senior Management

### 4.0 INSTRUCTIONS

1. Each site achieving full INPO points maintains and tracks strategic ALARA exposure reduction initiatives for the purpose of reducing overall site collective radiation exposure (CRE).

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2. Each site not achieving full INPO points, and not meeting the requirements for exemption of an ALARA Strategic Exposure Reduction Plan, maintains an ALARA Strategic Exposure Reduction Plan. This plan is established for the purpose of documenting dose reduction strategies and their results.

**4.1 ALARA GOALS**

1. The PARC SHALL **establish** specific and measurable ALARA goals for the plant. These goals SHALL be reviewed and evaluated routinely.
2. Each department SHALL **review** departmental goals.
3. Specific goals SHALL be established annually and include, but NOT be limited to, the following:
  - annual site exposure (on-line and outage)
  - annual departmental exposures
  - number of personnel contaminations

**4.2 ALARA PLANNING AND JOB REVIEW**

A formalized ALARA Planning and Job Review process is utilized at each site and addressed in NMP-HP-204, ALARA Planning and Job Review. This process includes radiological planning, the assessment on ongoing radiological work against established goals, and completion of post job reviews for input into future job planning.

**4.3 ALARA SUGGESTION AND IMPROVEMENTS PROGRAM**

The ALARA Suggestion Program provides a method to capture and evaluate proposed ALARA improvements. Personnel may submit their suggestions by writing a condition report or submitting them directly to ALARA personnel for further review and disposition.

**4.4 ALARA COST BENEFIT ANALYSIS**

An ALARA cost-benefit analysis is a tool to be used when evaluating ALARA suggestions and recommended changes. The value of a person-rem saved is based on INPO Collective Radiation Exposure (CRE) performance for each individual unit.

- First Quartile performance                      \$20,000/person-rem
- Second Quartile performance                      \$40,000/person-rem
- Third Quartile performance                      \$60,000/person-rem
- Fourth Quartile performance                      \$80,000/person-rem

#### 4.5 ALARA TEAMS

1. ALARA Teams such as High Impact Teams (HIT), PARC Sub-Committees, or Radiation Exposure Action Teams (REACT) may be formed at the direction of plant management and/or RP ALARA. These ALARA teams are used to refine work processes and improve work group ownership of CRE for an individual task or group of related tasks.
2. Attachment 1 provides the guidance for the formation of a PARC Sub-Committee as well as make-up, required attendees, alternates to the required attendees and optional attendees.

#### 5.0 RECORDS

1. RP SHALL **transmit** ALARA records to Document Control electronically or manually.
2. These records SHALL include, but are NOT limited to, the following:
  - ALARA Review Packages
  - PARC meeting minutes
  - Annual and outage ALARA reports
  - All records are maintained per appropriate procedures

QA record (X)	Non-QA record (X)	Record Generated	Retention Time	R-Type
X		ALARA Review Packages	LP+99	GG2.031
X		PARC Minutes	LP+99	GG2.121
x		ALARA Reports	LP+99	GG2.122

#### 6.0 REFERENCES

1. 10 CFR 20, "Standards for Protection Against Radiations"
2. ANI Inspection Criteria 8.3, "ALARA"
3. INPO IER L2 11-41, "Unplanned Personnel Exposures from Highly Radioactive In-Core Components"
4. NMP-HP-204, ALARA Planning and Job Review
5. SNC Technical Policy 754, "As Low As Reasonably Achievable (ALARA)"
6. U.S. Nuclear Regulatory Commission Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be as low as is reasonable achievable" - Revision 3
7. U.S. Nuclear Regulatory Commission Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures as Low as Is Reasonable Achievable" - Revision 1

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<b>7.0</b>	<b><u>COMMITMENTS</u></b>		
<b>7.1</b>	<b>FARLEY</b>		
	None		
<b>7.2</b>	<b>HATCH</b>		
	SNC19820, SNC19821, SNC20588, SNC24498		
<b>7.3</b>	<b>VOGTLE</b>		
	1. Commitment Numbers		
	1984301260, 1984301263, 1984301268, 1984301269, 1984301349, 1984301983, 1984302622, 1985303534, 1985305113, 1985307050, 1985307370, 1992324762, 1999340604, 2002243145		
	2. Condition Reports and Action Items		
	1990218190		
<b>7.4</b>	<b>VOGTLE 3-4</b>		
	COMTA 1348,1349, 2071, 2480,2880, 3226, 3337, 3343, 3345, 3346, 3270, 3273, 3344		

## PARC Sub-Committee Formation

The PARC Sub-Committee is responsible for driving lower exposure, implementation of approved action and communicating these actions to Management and Site personnel.

Formation of a PARC Sub-Committee is appropriate for activities where the PARC has approved the activity and dose goal but, the workers and RP have determined there are opportunities for meaningful dose reduction through increased departmental accountability and appropriate department ownership.

It may also be formed prior to the full PARC meeting to form or revise a dose estimate for activities for presentation to the full PARC.

1. REQUIRED PARC Sub-Committee Members are as follows:

- |                                   |  |
|-----------------------------------|--|
| Radiation Protection Support Supt | Alternates:<br>RP Operations Supt<br>RP Supervisor |
| Supervisor over activity          | Alternate: Cognizant Dept. Supervisor              |
| Representative from Work Group    |  |
| Department Dose Champion          | May also serve as Work Group representative        |
| Work Planning Representative      |  |

2. Optional Attendees (attendance is **REQUIRED** if sponsoring the activity)

- Engineering
- Chemistry
- Security
- Site Design
- Maintenance Contracts