



EXTREME HEAT AWARENESS

TOOLBOX TALK: Extreme Heat Awareness

RATTLIR Safety Series – "Strike Before It Bites"

Purpose

During sustained summer heat conditions, including NERC Hot Weather Alerts, power plants must maintain full operational capability while employees face significant risk of heat stress, dehydration, and heat-related illnesses. This toolbox talk highlights extreme heat hazards, early warning signs, protective strategies, and operational considerations during hot weather reliability events.

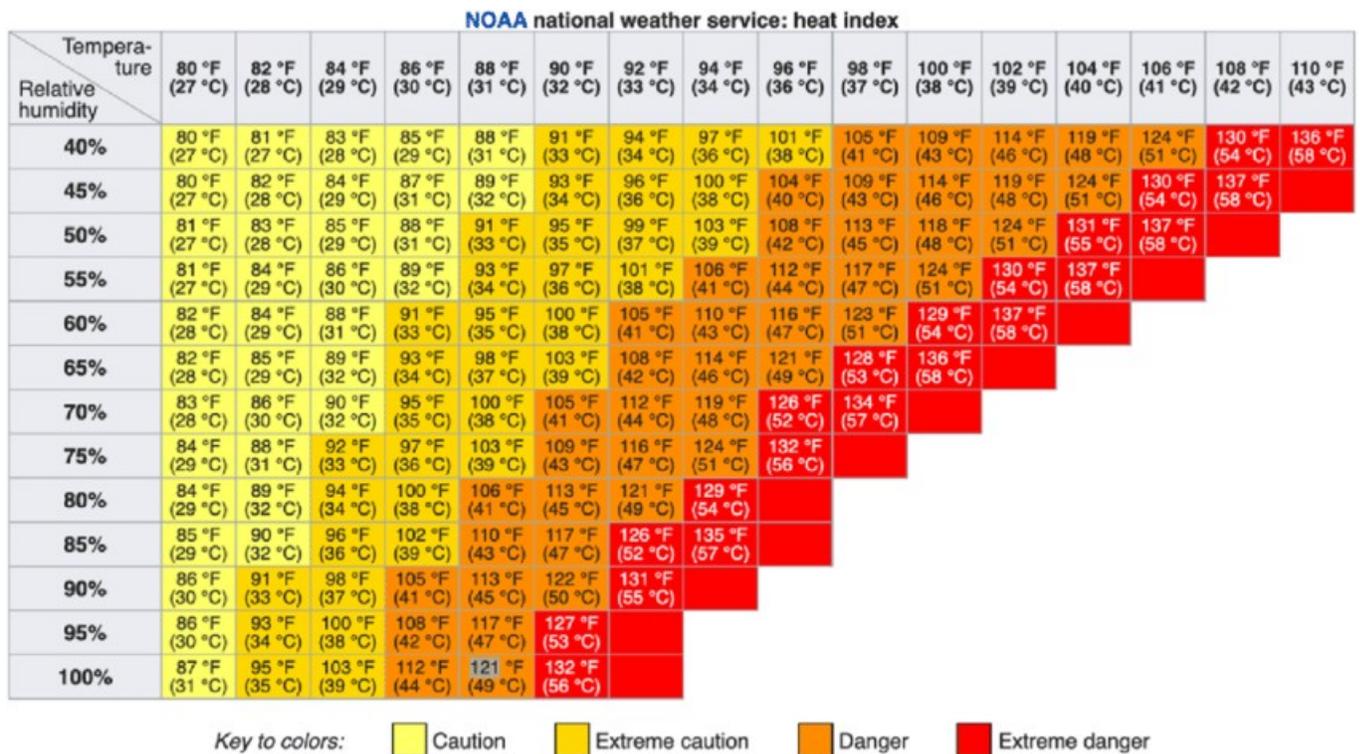


Figure 1 – Heat Index Chart



EXTREME HEAT AWARENESS

Extreme Heat Hazards

- NERC Hot Weather Alerts require plants to maintain output and reduce unplanned outages, increasing outdoor work demand.
- Heat stress becomes severe when temperatures exceed 90°F with high humidity.
- Workers may experience rapid dehydration, reduced reaction time, and decreased cognitive function.
- Turbines, transformers, and auxiliary systems may run hotter, increasing operational risk.

Recognizing Early Symptoms of Heat Stress

- Heavy sweating or sudden lack of sweating.
- Dizziness, lightheadedness, or confusion.
- Headache, nausea, or muscle cramping.
- Hot, red, dry, or moist skin.
- Difficulty concentrating or unusual irritability.

Exposure Limitations Based on NOAA Heat Index Categories

Extreme Danger (Heat Index $\geq 125^{\circ}\text{F}$)

- Suspend nonessential outdoor work immediately.
- Limit any essential work to medical or operational emergencies only.
- Use cooled shelters and mandatory rest breaks every 10 minutes.
- Workers must be continuously monitored for signs of heat stroke.
- Full hydration plan required – water + electrolytes every 10–15 minutes.

Danger (Heat Index 103–124°F)

- Follows strict work-rest cycles based on workload and wet bulb globe temperature.
- Heavy manual tasks should be rescheduled or assigned to additional personnel.
- Mandatory hydration breaks every 15 minutes.
- Use shade structures, cooling towels, and portable cooling devices.
- Monitor workers – heat illness can occur suddenly.

Extreme Caution (Heat Index 90–102°F)

- Increase hydration frequency and schedule more frequent rest breaks.
- New or unacclimatized workers require reduced workloads.
- Assign high-exertion tasks early in the day or after peak heat hours.
- Shade and cooling resources must be available on demand.



EXTREME HEAT AWARENESS

Caution (Heat Index 80–89°F)

- Heat strain begins to affect performance – monitor workers closely.
- Encourage regular hydration (water every 20 minutes).
- Review work plans for prolonged exposure or high exertion tasks.
- Ensure PPE does not impair heat dissipation.

Safe Work Practices for Extreme Heat

- Wear lightweight, breathable, moisture-wicking clothing.
- Use cooling towels, neck wraps, and portable shade canopies.
- Use sunscreen and UV protection to prevent sunburn, which increases heat stress.
- Monitor coworkers – heat stress often appears suddenly.
- Plan tasks requiring manual effort early in the day.
- Balance electrolyte intake – avoid energy drinks and high-caffeine beverages.

Operational Considerations During NERC Hot Weather Events

- High ambient temperatures decrease cooling efficiency for turbines, generators, and heat exchangers.
- Transformers may approach thermal limits during peak loads.
- Auxiliary cooling systems must be verified for proper operation.
- Outdoor tasks must be carefully planned to minimize worker heat exposure while maintaining reliability.

Discussion Questions

- Do you understand the signs and symptoms of heat stress and heat exhaustion?
- Are you prepared with hydration, shade options, and PPE for today's conditions?
- Do you understand how extreme heat affects plant operations during NERC Hot Weather Alerts?

RATTLIR Takeaway

Extreme heat places significant strain on both workers and equipment. Recognizing early symptoms, staying hydrated, and planning work during cooler periods helps prevent heat-related incidents. RATTLIR strikes before it bites by promoting proactive heat-stress management during high-demand summer operations.