

Sample Safety Features - Thermal Runaway Propagation Protection (TRPP) System



- NOT an extinguishing system – limits propagation
- NOVEC 1230 injected into each module via piping
- UL 9540A Unit and Installation level test data indicates thermal runaway event limited to initiating cell in both tests – no cell-cell propagation – due to extinguishing and cooling effects

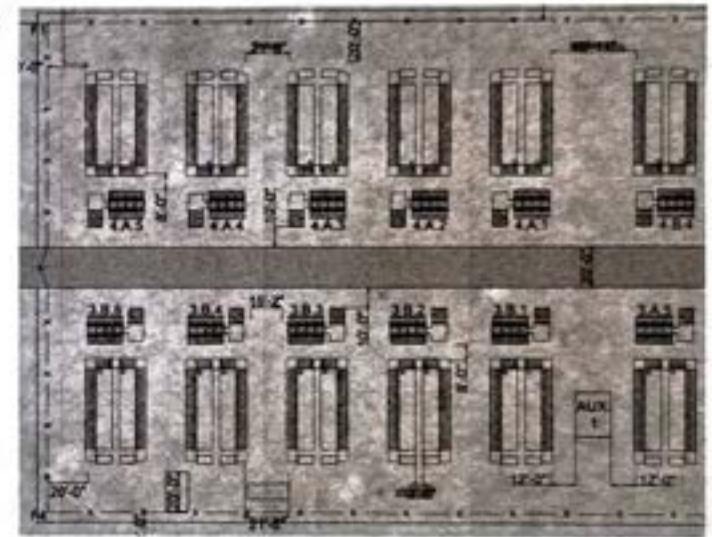
KEY TAKEAWAYS:

- TRPP IS NOT A CODE-REQUIRED SYSTEM
- IT IS PROVIDED FOR ENHANCED SAFETY
- UL 9540A TEST DATA FOR THIS SPECIFIC INSTALLATION INDICATES IT LIMITS PROPAGATION TO A SINGLE CELL

Sample Safety Features – Separation Distances



- Back-to-back containers are spaced 3'6" apart – 3' minimum per NFPA 855 (N/A for Remote Locations)
- Pairs of containers are either 21'8", or 40'11" apart



KEY TAKEAWAYS:
SEPARATION DISTANCES EXCEED MINIMUM CODE REQUIREMENTS

Sample Safety Features



- **Listings**
 - UL 9540 Listing is required – draft report issued
 - UL 1973 – Battery Modules
 - UL 1741 – Inverters
- **Fire Alarm System**
 - Fire alarm system is required
 - Detailed drawings and design will be reviewed, and must comply with the IFC, NFPA 855 and NFPA 72
- **Battery Management System**
 - Evaluated as part of UL 9540 Listing
- **Gas Detection**

CO and LEL gas detection provided in every container (many projects utilize only one type of detector)

Differences between Conditional Use Permits and Code Compliance



- Conditional Use Permits (CUP)
 - CUPs are subjective in nature and require an approval independent from Code Compliance / Life Safety.
 - CUPs grant an applicant permission to pursue the development of construction plans and drawings for a specific operation at a specific location.
 - A CUP is ***NOT an approval to construct***. Its legal authority is limited an approval of the ***potential*** to perform construction of a specific project in a specific location, contingent upon additional legal requirements (Codes).
- Code Compliance and Construction Permits
 - Fire and Building Codes do not have a CUP concept. They set the minimum legal requirement for fire and life safety of a construction project. The requirements are compulsory, enforced by law.
 - The codes are objective in their requirements – Pass or Fail.
 - Most projects require more than one round of plan check and design correction to ensure total compliance

Differences between Conditional Use Permits and Code Compliance



Key Takeaways:

- A CUP grants the authority for a specific function to be performed at a specific location.
- A Code Compliance Evaluation and Construction Permit allow the construction of the facilities that will perform the function.
 - Many projects obtain a CUP but never pass Code Compliance for design and construction.
- Not all projects require a CUP. ***Every project*** subject to the provisions of the adopted Codes require compliance.
- The Santa Fe County Fire Marshal's Office is legally required to enforce the applicable Codes and Standards, independent of the CUP. Where a project meets the requirements of the Codes, Standards, and locally-adopted amendments thereto, the project is granted a construction permit.

Summary



- Overall installation must comply with 2021 IFC and 2023 NFPA 855
- Additional safety features are provided that are above the minimum requirements
- The additional safety features reduce the potential of thermal runaway to propagate past a single cell based on UL 9540A testing, and provide additional explosion protection for first responder safety.
- The project is required to comply with all other applicable codes and standards, including NFPA 72 (*Fire Alarm Systems*), NFPA 68 (*Deflagration Venting*), NFPA 69 (*Explosion Prevention Systems*), NFPA 22 (*Water Tanks*).
- All Atar Fire review items must be satisfactorily completed, prior to recommending approval.
- Additional drawing, project information, and submittals will be required to validate full compliance. This is a normal part of any project involving a Fire Department approval. **FULL COMPLIANCE WITH ALL APPLICABLE FIRE/LIFE SAFETY CODES AND STANDARDS IS REQUIRED.**
- It is the professional opinion of Atar Fire that the level of detail provided at this time is sufficient for the CUP approval process

What is the CUP Criteria?

A CUP is *NOT* approved if the proposed use will tend to cause:

1. Detriment to health, safety and general welfare of the area;
2. Road congestion;
3. A potential hazard for fire, panic, or other danger;
4. Overcrowding land and cause undue concentration of population;
5. Interference with adequate provisions for schools, parks, water, sewerage, transportation or other public requirements, conveniences or improvements;
6. Interference with adequate light and air; or
7. Inconsistency with the purposes of the property's zoning classification or in any other way inconsistent with the spirit and intent of the SLDC or SGMP.



1. Detriment to health, safety and general welfare of the area

- Solar projects do not create significant noise, light, traffic or other significant operational impacts. The operation of solar panels is not detrimental to environmental conditions at the site. The project will be required to be developed to meet and comply with all applicable requirements contained in the SLDC as well as all applicable state and federal laws, and all codes and standards as adopted in Santa Fe County, New Mexico to ensure that public health and safety is protected.

Staff's response: *the proposed project will not be a detriment to health, safety and general welfare of the area.*



2. Road congestion

- Any traffic impact to NM-14 will be generated during the construction of the facility, including the 2.1 mile access road and 2.3 mile generation tie-in line. Once operational, traffic will be minimal as only 4 technicians will regularly work at the site (Mon – Fri with occasional work on Saturday).

Staff's response: *the proposed project will not create road congestion, as shown in the current traffic threshold analysis.*

3. A potential hazard for fire, panic, or other danger

The project will comply with or exceed all applicable fire codes including but not limited to:

- International Fire Code, 2021 edition, as adopted by 10.25.2 NMAC ("Fire Prevention and Public Occupancy") and 2021 International Wildland Urban-Interface Code (IWUIC) as amended Santa Fe County Ordinance 2023-06.
- Santa Fe County Ordinance 2023-06 and Ordinance 2023-09 as adopted by the Board of County Commissioners.
- National Fire Protection Association (NFPA) 855, Standard for the Installation of Energy Storage Systems (2023 edition)
- New Mexico Commercial Building Code as adopted by 14.7.2 NMAC ("2009 New Mexico Commercial Building Code") which adopts by reference the 2009 International Building Code.



3. A potential hazard for fire, panic, or other danger (cont.)

- The conditional use permit application has been deemed complete by the Santa Fe County Fire Department. Both Atar Fire and Santa Fe County Fire Department conclude that a sufficient level of information has been provided to validate the issuance of a Conditional Use Permit, as it pertains to the reviewed fire and life safety codes. However, all the items included in the review letter must be satisfactorily addressed prior to issuing a development permit and commissioning of the facility.

Staff's response: *Potential hazards for fire, panic or other danger will be appropriately mitigated through conformance with applicable local and federal fire codes.*



4. Overcrowding land and cause undue concentration of population

- The project will not result in any population increases and meets the open space requirement of the SLDC. The property owner owns the surrounding parcels and is considering a Transfer of Development Rights (TDR) to preserve the agricultural uses of the area in perpetuity.

Staff's response: *The project will not overcrowd land or result in concentration of population.*

5. Interference with adequate provisions for schools, parks, water, sewerage, transportation or other public requirements, conveniences or improvements

- A solar facility does not result in population growth and therefore does not put additional demand on public services. Water for the ongoing operations of the facility will be much less than residential development, irrigated agricultural or most industrial uses. Onsite septic will handle any wastewater generated by the office use.

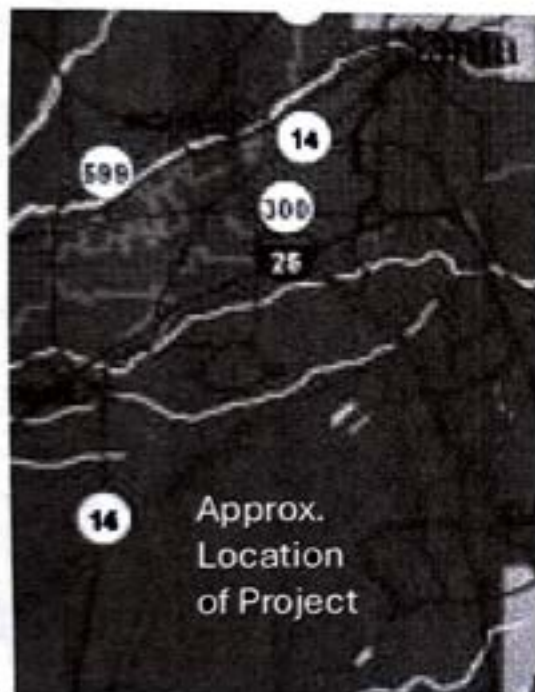
Staff's response: The proposed solar facility will not interfere with adequate provisions for schools, parks, water, sewerage, transportation or other public requirements.

6. Interference with adequate light and air

- The proposed solar facility includes minor lighting that will be required to meet SLDC requirements and be shielded and downlit. The “Monopole” or “H-frame” structures allows for air and wind to flow through with minimal obstruction. Emissions from construction will be short-term and ongoing maintenance will result in small amounts of fugitive dust and other emissions.

Staff’s response: The proposed solar facility will not interfere with adequate light and air. Staff recommends that the “monopole” structure is used for the transmission line.

7. Consistency with the purposes of the zoning classification or in any other way inconsistent with the spirit and intent of the SLDC or SGMP



According to Sect 7.2.2.2 of the SGMP,

“New Mexico gets approximately 6 full sun hours per day, on average, almost everywhere in the state. This coupled with gentle sloped terrain of Santa Fe County coupled with the annual mean total sunshine hours of 3,400 creates an ideal setting for solar energy applications.”

Solar Power - Annual Potential *

-  Least Potential
-  Moderate Potential
-  Medium Potential
-  Most Potential



Map 7-1 A: Renewable Energy Potential-Solar and Wind

7. Consistency with the purposes of the zoning classification or in any other way inconsistent with the spirit and intent of the SLDC or SGMP (cont.)

- Appendix B, the Use Matrix of the SLDC allows commercial solar facilities as a conditional use within the RUR-F zone. RUR-F zone accommodates primarily large lot residential, grazing, ecotourism, equestrian uses and renewable resource-based activities. Solar facilities are not necessarily exclusive of these uses. The physical structure of the proposed project will be visually subordinate to the existing landscape.
- **Staff's response:** The proposed solar facility is consistent with the spirit and intent of the SLDC and the SGMP.

Recommendation

- Staff reviewed the application for conformance with SLDC design standards and found that it meets all of the applicable requirements of the code.
- Staff reviewed the proposed use and determined that it meets the criteria to be approved for a Conditional Use Permit.
- Staff recommends that if approved by the Planning Commission, the project is subject to the following conditions.

Conditions of Approval

1. Compliance with all Reviewing Agencies' requirements, including the 90 conditions imposed by Santa Fe County Fire Prevention (see memo from Fire Marshal's office).
2. The drilling or use of individual and/or shared wells for this use on this property is prohibited.
3. The Applicant shall provide proper buffering and screening by installing a paneled fence to a portion of the proposed 8' tall fence that will be located on the southwest portion of the property.
4. Permanent fencing will be required around all designated archeological sites to delineate and preserve the integrity of these areas.
5. Prior to the recordation of the CUP site development plan, all access roads shall be permitted through Santa Fe County, built out and inspected, with financial guaranties in place.



Conditions of Approval

6. The CUP site development plan showing the site layout and any other conditions that may be imposed through the approval process shall be recorded at the expense of the Applicant in the office of the County Clerk in accordance with Chapter 4, Section 4.9.6.8.
7. Utilization of the 70-foot-tall steel monopoles will be required, as they have less of a visual impact. The poles will be required to blend into the natural landscape and shall be nonreflective.
8. A decommissioning bond (may contain salvage value) will be required prior to recordation of the CUP Site Development Plan, and must be in place for the life of the project.
9. The Applicant will be required to apply for all applicable Development Permits after the CUP recordation.

Conditions of Approval

10. Prior to recordation of the CUP Site Development Plan the Applicant will be required to renew its access permit from NMDOT.
11. Applicant shall obtain an approved liquid waste permit from NMED prior to the submittal for a Development Permit.
12. The Applicant is required to work in consultation with the appropriate flood zone authorities to address the requirements specified in Chapter 7, Section 7.18.9.1. of the SLDC for any steel monopole located within a Zone A flood hazard area and submit the findings to staff for the record.
13. Construction activity to be limited to a Monday-through Saturday 7am to 7pm work schedule. Any deviation from these construction hours will require 48 hours' notice to Santa Fe County and neighboring property owners.



Conditions of Approval

14. Prior to operations, the Applicant shall request and pass all required inspections and obtain a Santa Fe County Business License.
15. A detailed water budget is to be submitted and reviewed by Glorieta Geoscience and Santa Fe County Utilities Division.
16. The Applicant will be required to provide a Smoke and Plume Model that will be reviewed by Santa Fe County Fire Prevention prior to the recordation of the CUP.
17. Santa Fe County shall be reimbursed by the Applicant for the third-party reviews conducted by Atar Fire and Glorieta Geoscience pertaining to this submittal prior to the recordation of the CUP.



Conditions of Approval

18. Per Santa Fe County Fire Prevention requirements, a 10' noncombustible defensible space will be required as part of an overall 30' defensible space around the perimeter of the proposed development and to be illustrated on the recorded CUP Site Development Plan.
19. Construction debris must be disposed of in a solid waste container and hauled off to an authorized landfill as needed for compliance with NMED regulations.