



REVIEW OF THE LAKE CARGELLIGO BUSH FIRE MANAGEMENT PLAN AND HV INSTALLATION SAFETY MANAGEMENT PLAN

PREPARED FOR GRAPHITE ENERGY PTY LTD

SUMMARY

This reports summaries the findings by CNF of the compliance by Graphite Energy's Lake Cargelligo facility HV system to meet he Essential Energy requirements for Bush Fire Management and HV Installation Safety Management

John Giannasca

13th September 2021



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COVER LETTER

13th September 2021

Graphite Energy Pty Ltd
ABN 87 096 136 248
420 Elizabeth St,
Surry Hills NSW 2010
Attn: Byron Ross – Chief Operating Officer

Dear Byron,

Re: Review of the Lake Cargelligo Bush Fire Management Plan and HV Installation Safety Management Plan

We are pleased to submit a report on the review of the Lake Cargelligo Bush Fire Management Plan and HV Installation Safety Management Plan. The purpose of this review is to determine the adequacy of the Graphite Energy plans to comply with the Essential Energy requirements as outlined in their document Lake Cargelligo Solar Thermal_2020 IPART Bushfire Preparedness Compliance and other supporting documents listed in this report.

As stated in our previous report of the 30th November 2020, the facility is connected to the Essential Energy network via a 22kV underground cable; as such we believe that this site is exempt from the audit requirement as the site has no overhead lines. We do, however, believe it is good practice to have the necessary Bushfire Management Plans and Installation Safety Management Plans in place and compliant to normal industry standards, we have reviewed your documentation and conducted an audit on bushfire readiness and believe Graphite Energy has in place the necessary plans, process and reviews necessary to meet the normal industry requirement for a HV facility of your type and in the area located.

Should you require any additional information on this report, or any other matter please do not hesitate to contact the undersigned

Yours faithfully,



John Giannasca – BE FIE (Aust)

Project Director
CNF & Associates Pty Limited
Postal Address: Level 2, 393 George St, Sydney NSW 2000

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REVISION

Prepared	Checked	Approved	Date	Rev
John Giannasca	B Rheinberger	John Giannasca	15/11/20	A
John Giannasca	B Rheinberger		30/11/20	B
John Giannasca	B Rheinberger		13/9/21	C

RELIANCE AND LIMITATIONS

This report: has been prepared by CNF & Assoc for Graphite Energy and may only be used and relied on for the purpose agreed. CNF & Assoc otherwise disclaims responsibility to any person other than Graphite Energy arising in connection with this report. CNF also excludes implied warranties and conditions, to the extent legally permissible.

1 Purpose of Report

To review Lake Cargelligo Bush Fire Management Plan and Installation Safety Management Plan to verify that the Plans and Procedures are suitable, and that sufficient management diligence has been undertaken to ensure compliance.

2 Introduction

Our review of the HV installation at of the GE facility at Lake Cargelligo has determined that it does not fall into categories which meet the intent of the Essential Energy requirements. We refer to the information provided by Essential Energy at the High Voltage Customer Awareness Session which stated that the purpose of the Plans and Audits was for Essential Energy to meet its obligation under the following:



Section 7 (b) (v) of the Electricity Supply (Safety and Network Management) Regulation 2014
- management of bush fire risk relating to aerial consumers mains on bush fire prone land that is private land in respect of which the network operator may give directions under Division 2A of Part 5 of the Act

Division 2A of Part 5 of the Electricity Supply Act 1995 defines aerial consumer mains as:

- aerial consumers mains means that part of an electrical installation consisting of overhead conductors and support structures between the main switchboard of an electrical installation and a support structure that is the connection point with the distribution system.

We note that the Graphite Energy Lake Cargelligo Facility does not have any aerial conductors or structures on its land or land under its control (Refer Appendix A). The connection for the Essential Energy supply is by underground trenching from the Essential Energy Pole to Plant Substation.

We believe that the site is exempt from the audit requirement under item 2a of the EE Compliance requirements stated below

Essential Energy 2020 Bushfire Preparedness Compliance FAQs for HV Customers

Question	Response
1. Is the Certificate of Compliance an annual requirement?	Essential Energy may periodically request evidence that a customer's Installation Safety Management Plan (ISMP) is up to date, and that the ISMP is appropriately implemented at the site. Frequency of the bushfire risk management audit will be guided by recommendations from auditors based on site-specific conditions.
2. Are there exemptions for: a. nil overhead lines / underground network? b. HV network installation removal / disconnection? c. site not identified as bushfire prone land by local Council / NSW RFS / NSW Planning Portal / Local Environmental Plan? d. We have been audited by Independent Pricing and Regulatory Tribunal (IPART) on bushfire compliance and recently on our entire Electricity Networks Safety Management Systems (ENSMS) and have been deemed a low risk site?	a. Essential Energy's obligation to manage bushfire risk associated with aerial consumer mains is limited to Overhead networks. A statement will be required from the Auditor to confirm network configuration. b. If a HVC's network has been removed, a statement of the same from the Auditor will be sufficient for an exemption to be granted. If a HVC's network has been disconnected, a Certificate of Compliance will be required as the site may be reconnected at any time. c. Under Essential Energy's <i>CEOP8022 Bushfire Risk Management Plan</i> , bushfire prone status is applied to rural locations which is defined as "land capable of carrying or supporting wildfire". d. There will be no exemption based on previous audit results. Essential Energy has an ongoing obligation to manage bushfire risk from aerial consumer mains.

Because the facility does not have an aerial connection, auditors suitable to Essential energy would not conduct an audit for compliance to EE requirements when such compliance was not required.

3 Document Review

The following documents have been reviewed in the preparation of this report

3.1 Graphite Energy Documents

1. GE-Bushfire Management Plan for the Protection of HV assets
2. GE-HV Installation Safety Management Plan
3. GE-Electrical Works Management Plan
4. GE-High Voltage Procedure
5. GE-HV Access and Switching Procedure
6. GE-Working Near to Overhead Services and Obstructions Procedure
7. GE-Working Near Underground Services
8. GE-IMS Manual, Documents, Checklists, Schedules, and Forms

3.2 Other Documents

Reports

1. *Lake Cargelligo PS_Protection Design Philosophy_V3.0* – Prepared by Hill Michael
2. *Lake Cargelligo PS_Protection Setting Design_V1.1* – Prepared by Hill Michael
3. *SEL 700G Settings* – Supplier Document

Essential Energy and related

1. *Lake Cargelligo Solar Thermal_2020 IPART Bushfire Preparedness Compliance*

2. *HVC ISMP Awareness Session 18092020*
3. *Essential Energy Bushfire Management Plan - CEOP8022*
4. *Ausgrid - ASP3 DIP ISMP Format and Guideline*
5. *Negotiated Short Form Customer Connection Contract – Essential Energy*

4 Audits

Several audits and interviews in the preparation of this report were conducted

4.1 Desktop Audit #1 of Graphite Energy Documentation

This audit was conducted from 28/8/20 to 30/8/20. The purpose of the audit was to conduct a desk-top review of the plans and procedures for the HV installation at the Graphite Energy Lake Cargelligo facility to review their suitability.

As a result of the audit, CNF made several recommendations which were taken on by Graphite Energy with documents modified, new documents created, and training conducted. None of the audit findings constituted a non-conformance, but rather elements were suggested for clarity and a new document suggested titled Installation Safety Management Plan. It is noted that all the elements suggested to be included in this plan existed in other existing documentation. CNF believed that the creation of this document would bring together information needed in one document and meet the requirements of an independently audited system. CNF suggested that Graphite Energy follow the guidelines prepared by Ausgrid titled *ASP3 DIP ISMP Format and Guideline*

4.2 Desktop Audit #2 of Graphite Energy Documentation

Graphite Energy submitted the revisions and additions recommended by CNF on the 17th September 2020. CNF conducted a review of these documents on the 22nd September 2020. The results of the review by CNF resulted in no additional comments or recommendations

4.3 Site Audit #1

CNF attended the Lake Cargelligo site from the 28th September to the 2nd October 2020. The purpose of the inspection was to:

1. Validate that the description of the HV system as described in the GE documentation was consistent with that installed at the site
2. Review the condition of the installation for any signs of
 - a. Electrical non-compliance
 - b. Clearance from combustible material
 - c. General state of housekeeping
 - d. Proneness of installation to grass fires and ember attack
3. Review the site documentation
4. Assess the state of readiness of the installation in the event of bush fire
5. Determine the frequency of inspection to determine the measures required to prevent to build up of fuel within a 100m perimeter of the HV asset.

We report that the audit was successful with no non-conformances and a few recommendations for improvements. These were mainly concerning the regular inspection of EE assets coming to and from the site. While not a requirement it would be good practice given the lines follow the normal vehicle to route to and from the site.

4.4 Site Audit #2

Date of Audit: 8-12 March 2021

Conducted by: John Giannasca and Brian Reinburger

Purpose: To conduct a desk-top review of the plans and procedures for the HV installation at the Graphite Energy Lake Cargelligo facility to review their suitability.

Result: The comments and recommendations of the previous audits conducted the 28-30 August 2020, 17-22 September 2020 and site visit and audit 28 September to the 2 October 2020 have been closed out and/or incorporated into the current revision of the documents and procedures.

4.5 Desktop Audit #3 of Graphite Energy Documentation

Due to Covid restrictions the site audit planned for August 2021 was conducted remotely via Zoom conference links with Peter Lemmich – CEO, Byron Ross – COO and site personnel on the 24th August 2021.

Date of Audit: 24 August 2021

Conducted by: John Giannasca and Brian Reinburger

Purpose: To review any outcomes from Site Audit #2

Result: Documents reviewed and found compliant to the Graphite Energy Integrated Management System SQ and WHS plans

5 Findings

We find that the Graphite Energy Lake Cargelligo facility meets the requirements of bushfire readiness for a facility of its type and use. The location of the HV assets, the mode of connection from the Essential Energy pole located off the site boundary greatly minimise any possibility of the connection to bush fire damage. Additionally, there are no large, medium, or small trees or shrubs within the vicinity of the HV assets. The large separation, over 100m from the HV substation, to any grass vegetation make it improbable that the substation will be affected by grass fires and unlikely that it will be affected by ember attack.

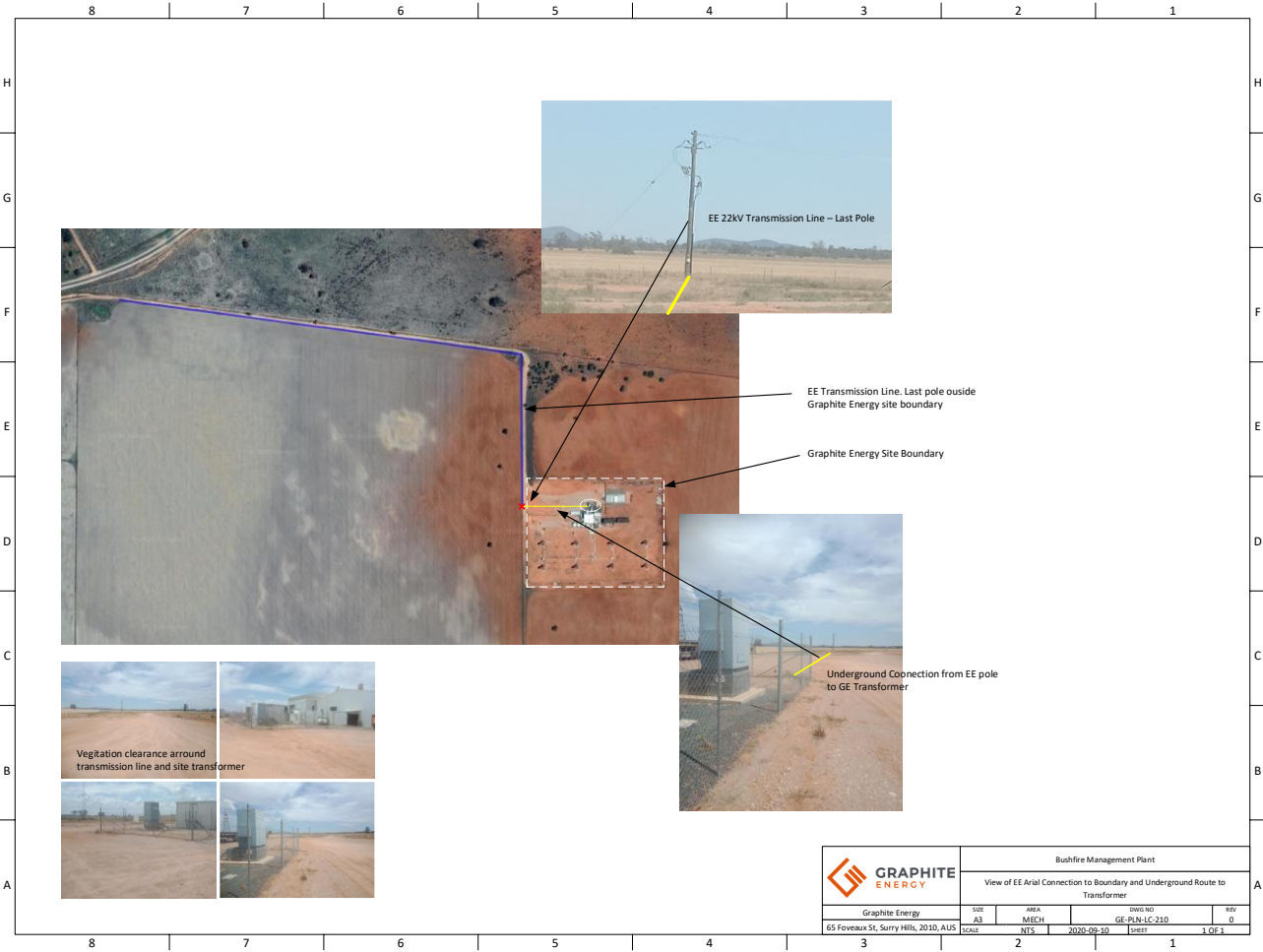
6 Recommendations

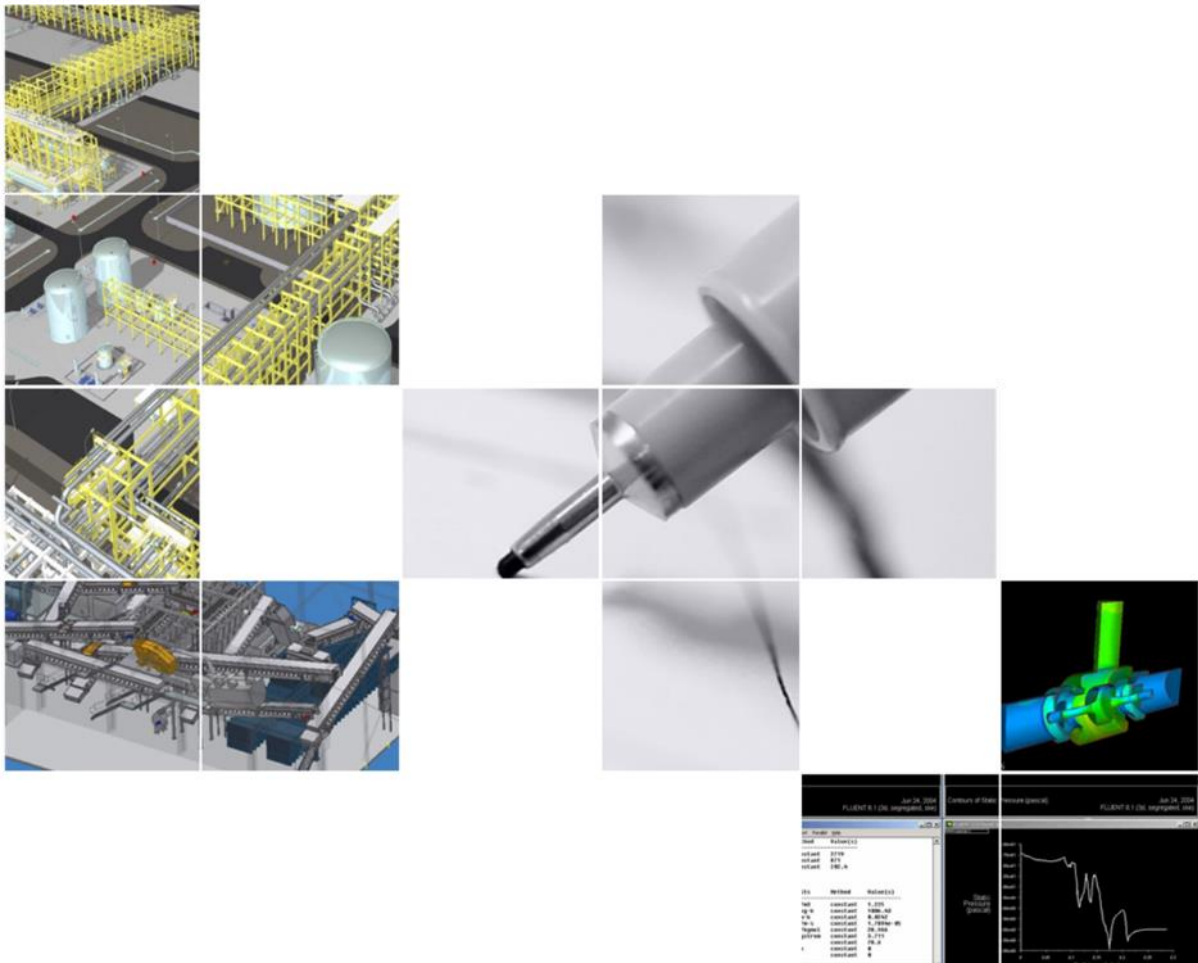
Graphite Energy and the site personnel should maintain vigilance during all seasons and especially seasons deemed to be bush fire prone. It also recommends that the rural fire contact list and response contact details be kept up to date and listed prominently at the site.

Our final recommendation is that the Essential Energy line leading to the boundary outside the site be visually inspected regularly and Essential Energy be informed if in the opinion of the Lake Cargelligo site management there is a build-up of vegetation in the easement area or any visible damage to the overhead line equipment which Essential Energy Should be aware of.

Appendix A Lake Cargelligo HV Connection and Distribution

The diagram below shows the 22kV connection to the boundary point outside the site and the underground connection from the site last pole to the GE substation and is an excerpt from the GE HV Bushfire Management Plan document. The diagram also displays an accurate representation of the vegetation in the vicinity of the GE HV installation





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