



**GAS IMPORT JETTY AND PIPELINE PROJECT
ENVIRONMENT EFFECTS STATEMENT
INQUIRY AND ADVISORY COMMITTEE**

TECHNICAL NOTE

TECHNICAL NOTE NUMBER: TN 019

DATE: 12 October 2020

LOCATION: Crib Point Jetty Works

EES/MAP BOOK REFERENCE: N/A

SUBJECT: Societal risk assessment for the Gas Import Jetty Works

SUMMARY The report attached to this technical note provides details of the societal risk criteria adopted for the Gas Import Jetty Works, risk results and conclusions.

REQUEST: N/A

NOTE:

1. Ms Kate Filippin recommended in her witness statement that the quantitative risk assessment (**QRA**) for the Gas Import Jetty Works include an assessment of the societal risk compared with published societal risk criteria.
2. Therefore, AGL commissioned a report to be prepared as a supplementary note to the previously issued QRA which summarises the societal risk criteria adopted for the project, risk results and conclusions. This report is referred to as the "Societal Risk Technical Memorandum for AGL FSRU QRA report".
3. The Societal Risk Technical Memorandum for AGL FSRU QRA report is attached to this technical note.

CORRESPONDENCE: N/A

ATTACHMENTS: 1 Attachment:

1. Societal Risk Technical Memorandum for AGL FSRU QRA report



Attachment 1

Societal Risk Technical Memorandum for AGL FSRU QRA report

Societal Risk Technical Memo for AGL FSRU QRA report

1 BACKGROUND

A Quantitative Risk Assessment (QRA) study was conducted to evaluate the risk imposed by the unloading of LNG from LNGC to FSRU, transfer of Gas from AGL Jetty to the Crib Point Receiving Facility and the risks imposed by the Diesel and Octane Tankers at United Berth. The results were captured and shared with AGL through DNV GL QRA report, PP225210, Rev. B (Document No. 11D0CEGF-4) issued dated 10th June 2019. However, the QRA report does not discuss the evaluation of societal risk for surrounding population. This technical memo is prepared as supplementary note to the previously issued QRA report which summarizes the societal risk criteria adopted for the project, risk results and conclusions.

2 SOCIETAL RISK

The societal risk is a measure of the risk that the events pose to the local population, taking into account the distribution of the population around the facility. The societal risk is expressed in terms of the likelihood of event outcomes that affect a given number of people in a single incident (e.g. the likelihood of event outcomes that affect up to 10 people, or the likelihood of event outcomes that affect up to 100 people).

2.1 Societal Risk Criteria

Societal risk criteria is based on the ALARP (as low as reasonably practicable) principle. The NSW Department of Planning (Ref. /1/) has provisionally adopted the indicative criteria in Figure 2-1 for addressing societal concerns arising when there is a risk of multiple fatalities occurring in one event.

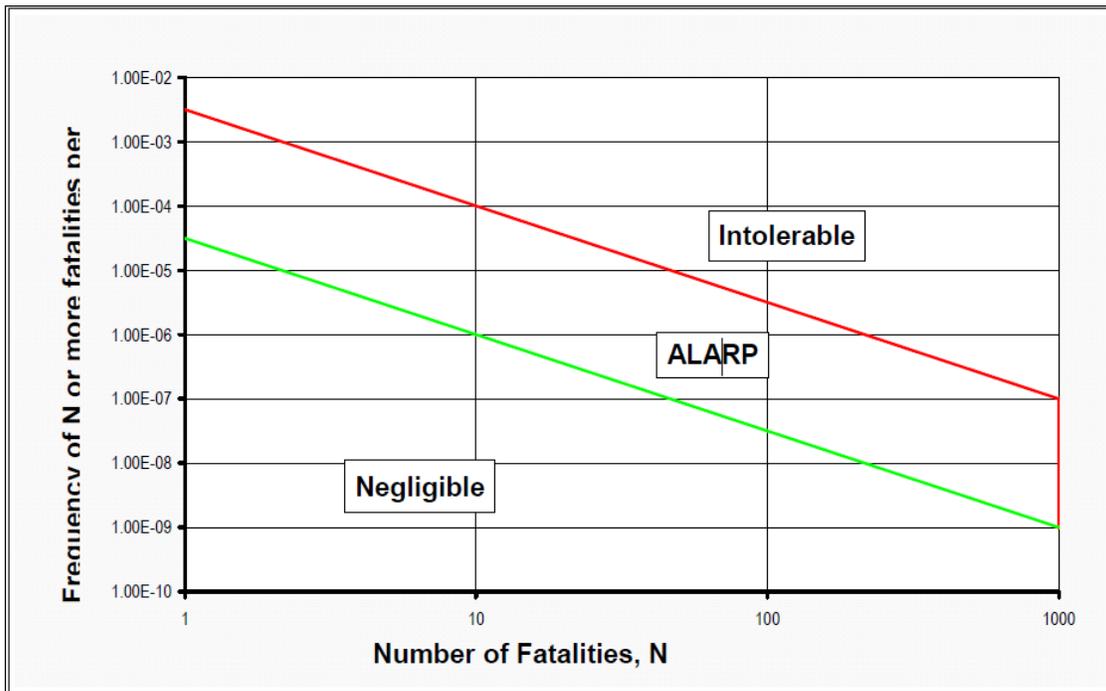


Figure 2-1: Societal Risk Criteria

The societal risk (F-N) curve is presented with two parallel lines which divide the plot area into three zones:

- Above the unacceptable/intolerable limit, the societal risk is not acceptable whatever the perceived benefits of the development;
- The ALARP area where the risk reduction may be considered for potential incidents in the area;
- Below the acceptable limit, the societal risk is negligible regardless of the perceived value of activity.

2.2 Population Data

The population present in the vicinity of the Crib point is used to determine the societal risk based on the offsite population up to 3 km from Crib Point receiving facility.

Each colored area represents the population density per km² with highly dense area indicated with 1001 to 2000 persons/km². The population density data surrounding the Crib point was used from the Australian Bureau of Statics website and indicated in Figure 2-2.

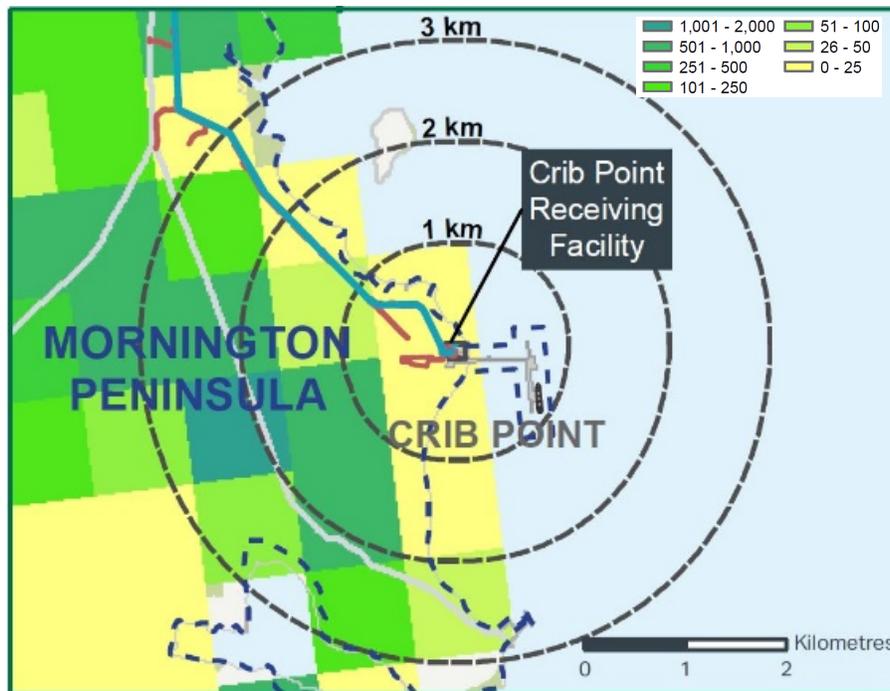


Figure 2-2: Population Density per km²

3 SOCIETAL RISK RESULTS

Two scenarios are considered for the societal risk based on the average population density and other one with highly dense population area of each colored category. The F-N curves are plotted for both cases in Figure: 3-1 and 3-2. It can be concluded from both F-N curves that the NSW

societal risk criteria is met and for both instances and it falls in negligible range of the F-N curve. The likelihood of multiple fatalities is tolerable.

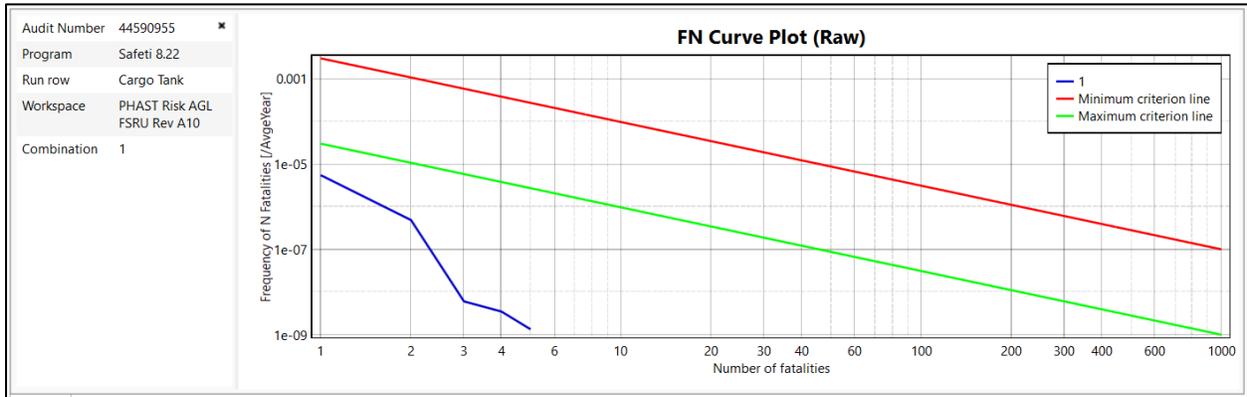


Figure 3-1: F-N Curve for Offsite average population density

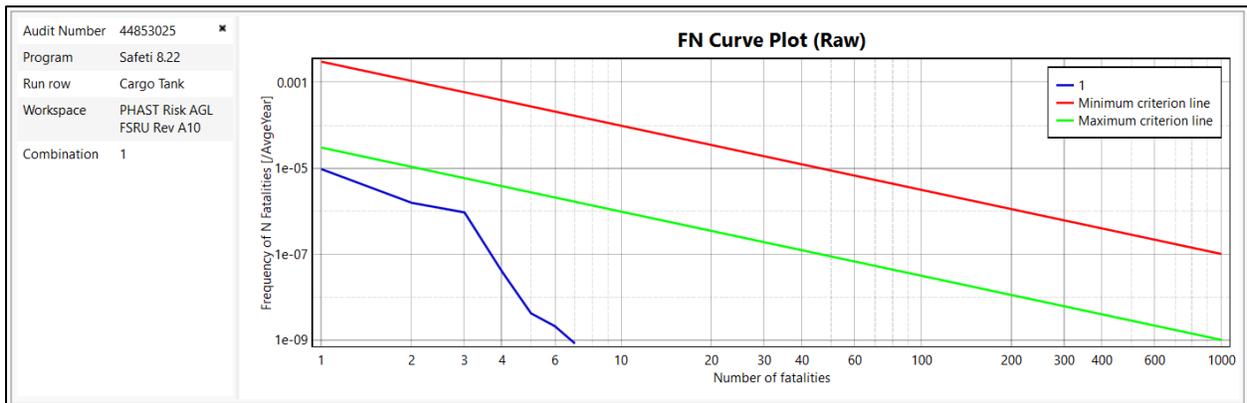


Figure 3-2: F-N Curve for Offsite maximum population density

4 CONCLUSION

It may be concluded that the proposed facilities meet the indicative societal risk criteria as stipulated in the Land Use Planning guidelines (Ref. /1/), produced by the NSW Department of Planning that are being used for this project development.

5 REFERENCES

- /1/ Risk Criteria for Land Use Safety Planning, Hazardous Industry Planning Advisory Paper No. 4, State of New South Wales through the Department of Planning