

10 January 2020

Subject: Southeast Texas Waterways Advisory Council (SETWAC)
Navigation Sub-Committee
Review of Waterway Suitability Assessment (WSA)
Orbit NGL Ethane Export Project (Sunoco/Energy Transfer Partners)

This letter serves to document the action taken by the SETWAC Navigation Sub-Committee to review and comment on the proposed Orbit NGL Ethane Project at Sunoco Terminal, Nederland, Texas.

Additional information concerning the specifics of this project proposal is included at the end of this letter, and is provided by the terminal; Sunoco/Energy Transfer Partners.

Background

Sun/ETP is currently operating an LPG export berth at its Nederland terminal based on a 2014 WSA. Along with this LPG operation (using berth #3), the terminal continues to operate four additional ship berths, primarily in the crude oil trade, serving vessels up to SUEZMAX size.

Proposal

Subsequent to the 2014 WSA, and resulting conversion of berth #3 to LPG loading, additional opportunity for more NGL movements is being pursued. The infrastructure needed to meet this new demand entails changes to existing berths i. E. docks #2 and #1 that will be in Propane, Butane and Ethane service. Vessels type/size will be similar to the VLEC's already calling at this facility's berth #3.

Essentially, Orbit NGL is requesting an amendment to the original WSA, expanding the scope of the project to include an additional berth (repurposed existing berth) and the subsequent increase in ship traffic for this trade. The ship count along with schedule and projections is detailed in the letter attached with this document.

Action taken by Nav Sub-Committee

Chairman of Nav Sub-Committee and USCG Vessel Traffic Service Port Arthur participated in an online presentation of the Orbit project expansion given by Michael Nesbitt and Chris Deslatte of Sun/ETP, on 9 October 2019.

Nav Sub-Committee convened a meeting on 24 October 2019 to address the revised Orbit WSA.

- Roster sheet is included with this letter listing the 26 attendees.
- Sun/ETP presented a detailed slide show concerning cargo operations, vessel

mooring, and projected traffic.

-Attendees were given the opportunity to ask questions, make comments and generally discuss any aspect of the proposal.

-The Chairman, also representing Sabine Pilots clarified the basic traffic flow that these vessels would be subject to, including compliance with the ***Ship Operating Traffic Protocol*** which details the accepted traffic management of piloted, oceangoing vessels in the Sabine Neches Waterway, administered by Sabine Pilots through their Dispatching Office.

-Other topics of discussion included, tug usage, overall recent increase in ship traffic, daylight versus non-daylight transits, and water borne fire fighting capability.

-In the interim from 24 October, Committee attendees were given the chance to respond with any further comments or concerns. As of the date of this letter, no formal comments have been submitted to the Committee.

Recommendations

The Navigation Sub-Committee, having studied and considered the Orbit project expansion along with Sun/ETP's petition to update the WSA for this additional Ethane ship traffic along the Sabine Neches Waterway, wish to issue this letter in support of the project as presented. Pursuant to the advisory capacity of SETWAC, the Committee Chair will be seeking full SETWAC board approval of this endorsement at the 23 January 2020 meeting, with the following qualifying remarks.

-Given the rapid expansion of NGL facilities and traffic along the SNWW, all efforts should continue within the local maritime community to add purpose designed and built marine firefighting assets along with appropriately trained personnel. The Committee especially emphasizes the need for those companies and terminals operating oil and gas facilities (such as Sun/ETP) to promote and lead this important safety effort.

The Committee remains committed to safely growing our waterway and offers our membership as a resource for this project going forward should Sun/ETP wish to engage with us in the future.

Capt. Charles A. Tweedel
Chairman
SETWAC Navigation Sub-Committee

**Waterway Suitability Assessment for Orbit NGL Ethane
Export Project at Sunoco Partners Marketing & Terminals,
Nederland, Texas**

Energy Transfer, L.P. (ET) and Satellite Petrochemical USA Corp. have formed a joint venture, Orbit Gulf Coast NGL Exports, LLC (Orbit NGL) to expand ET's LPG operations at Nederland, TX, to include export of ethane. The terminal currently exports propane and butane in addition to handling crude oil. ET now proposes to expand the LPG export operations and add ethane export operations starting in summer of 2010.

A Waterway Suitability Assessment (WSA) was performed for the LPG export operations in 2014. The WSA process included extensive outreach activities with Sabine Neches Waterway (SNWW) stakeholders including the Sabine Neches Navigation District (SNND), Sabine Neches Chiefs Association, local emergency management authorities, Sabine Pilots Association, and other waterway users through the Southeast Texas Waterway Advisory Committee. The WSA effort included a comprehensive risk assessment by Baker Engineering and Risk Consultants, Inc. that addressed concerns relative to movement of large volumes of LPG by ship, including navigation safety, security concerns, potential fire and explosion impacts, and potential business interruption impacts that could result from a major LPG vessel incident. The assessments showed that LPG vessels are neither exposed to nor present greater threats or risks than other vessels using the SNWW.

A new Addendum to the WSA has been prepared to address the changes engendered by the ethane project and other developments on the waterway since 2014.

The existing docks are designed to accommodate oil tankers up to the Suezmax class size. The LPG project entailed modification of crude oil loading Dock #3 to allow mooring and loading of Very Large Gas Carriers (VLGC) with capacities up to 83,000 m³. Dock #2, which currently handles only crude oil, will be modified to accommodate gas carriers Very Large Ethane Carriers (VLEC) with capacities up to 98,800 m³ in addition to crude oil.

The volume of traffic on the SNWW has increased substantially since 2014 and is expected to keep growing, primarily with LNG and crude oil exports. A vessel traffic study for the waterway completed in 2017 found that the capacity of the waterway will not be exceeded, but that Pilot and tug workforces will have to grow to keep pace.

Discussions with representatives of the SNND and the Sabine Pilots related found that they are planning and preparing for the expected growth and they are confident that their resources, and others such as the local tug fleet, will be able to grow meet the demands with respect to navigation safety and waterway security. The SNWW deepening project that was recently initiated will enhance navigation safety.

None of the new LPG and ethane operations will begin until mid-2020, and the new

traffic will take years to reach the forecasted levels, allowing sufficient time for resource planning. It also is quite possible that not all of the currently proposed projects will actually be constructed.

In any case, vessel traffic for the Orbit project will fall within predictions for the waterway. Current propane and butane shipments entail 10 LPG carrier calls per month; that will gradually increase to a total of 30 LPG loadings per month by late 2021. Propane and butane loadings forecast:

Currently 10 / month

July 2020 20 / month

October 2020 26 / month

July 2021 30 / month

Initial VLEC traffic is projected to be 6 ships per month with a potential maximum of 10 ships per month. Ethane forecast:

Mid-2020 6 / month

2021 or later 10 / month

The physical risks associated with ethane are generally similar to those for LPG and LNG, with flammability being the principal hazard. The characteristics of ethane, including flash point and vapor density, generally fall into the same ranges as those of propane and LNG. Thus, the ethane operations would not introduce any new cargo risk factors for the waterway.

Other than vessel traffic, conditions on the SNWW have not changed significantly since the 2014 WSA. Data on population growth is limited; however, there is no indication that the population density of communities along the waterway has changed appreciably.

The only significant change to the waterway itself is that work associated with the Channel Improvement Project has been initiated. That entails deepening, with some widening primarily in turns. Enhanced navigation safety is one of the stated advantages of the CIP. For the most part, it will allow larger vessels to transit the waterway which will in turn allow for a greater volume of cargo to be moved without necessarily necessitating an increase in the number of vessels. The CIP has no direct bearing on the ET project.

The VLECs currently planned for the project will be fully refrigerated new-build vessels with principal dimensions of: length 230.0 m (754 ft), breadth 36.6 m (120 ft), and loaded draft 11.5 m (37.7 ft). They are smaller than ships already calling at the terminal. The ships will have multi-fuel engines capable of operating on ethane, low sulfur fuel oil, and marine diesel. They will not be limited to daylight operations but will require two pilots on most transits. As planned, each VLEC will have up to four main

cargo tanks and two main deck tanks (primarily as alternate fuel) with anticipated maximum aggregate capacity of 99,000 m³ of ethane. That is equivalent to approximately 590,000 bbl, slightly larger than the LPG carriers currently calling at Nederland.

The gas carriers associated with the project do not present any new navigation challenges or operational risks for the waterway or the terminal. Although the vessels have not yet been identified, it is anticipated that all will be foreign-flagged and in full compliance with all applicable international standards and all applicable domestic statutes, and regulations.

The current assessment finds that the addition of the increased LPG vessel traffic and the new ethane vessel traffic will not adversely affect the safety and security of marine operations on the SNWW.