Objection	
Objector:	Mr Patrick Moran
Organisation Name:	Oysters for Suir
Objector Address:	The Mount, Cheekpoint, Waterford, Co. Waterford.
Objection Title:	Objection #OS010246 - 3rd party objection for Reg No:[P0606-04]
Objection Reference No.:	OS010246
Objection Received:	07 March 2022
Objector Type:	3rd Party
Oral Hearing Requested?	Yes
Application	
Applicant:	SSE Generation Ireland Limited
Reg. No.:	P0606-04
See below for Objection details. Attachments are displayed on the following page(s).	

From: Pat Moran
To: Noeleen Keavey
Date: Tuesday 8 March 2022 12:49:49

dear ms keavey
I SENT A SUBMISSION YESTERDAY ON LICENCE REVIEW P0606-04
IN MY SUBMISSION I PAID THE 100 EURO FOR AN ORAL HEARING
BUT FORGOT TO REQUEST AN ORAL HEARING IN MY SUBMISSION
I WOULD LIKE TO CORRECT THIS AND HAVE ADDED TO MY SUBMISSION
THAT I REQUEST AN ORAL HEARING
YOURS SINCERELY
PAT MORAN

Pat Moran

The Mount

Cheekpoint

County Waterford

07/03/22

Ref – Licence Review of P0606-03

Dear Sir or Madam

Can the review of Licence P0606-03 turn an illegal licence into a legal licence by backfilling information onto the file that should have been in the 2009 Environmental Impact Statement (EIS) when Licence P0606-03 was granted?

A mistake was made in the above licence that has turned into a major issue and impact on the following:

Licencing

Planning

The EIS

The Environment

Humans

The mistake in Licence P0606-03 being the increase in Chlorine use from 5 tonnes per annum to 1,300 tonnes per annum which was not reported or covered in the 2009 EIS. Following a grant of Planning from An Bord Pleanala in 2010 for a CCTG Plant on the site of the old Heavy Fuel Oil (HFO) Plant at Great Island the developers applied to the EPA for a licence (granted 2011). In 2009 the EIS submitted by the developers they the developers requested a continuation of the previous practices that the old plant had used as regards Chlorination, which was that Chlorination was administered for **One Hour** with a maximum concentration of 0.5mg/l of Chlorine measured at the outlet for that **One Hour**. That meant the overall usage of Chlorine would be 5 tonnes or less annually (Also in the EIS 2009 the proposed dosage rate of 5 litres per day). This measure is recorded within the 2009 EIS and is what the old HFO Plant adhered to for over 40 years and An Bord Pleanala was satisfied with and gave planning permission.

The EPA then made a decision to grant a Licence P0606-03 and in that licence the EPA indicated that the Chlorine use was not to exceed concentrations of 0.3mg/l at the outfall, but however they omitted the crucial piece of information that was the

"HFO plant was only Chlorine dosing for One Hour a day for 40 years adhering to the practice of a maximum concentration of 0.5 mgl/l of Chlorine at the outfall for the One Hour per day"

As stated in Mr A Fanning's Memorandum 2002 and from Great Island Power Station Ecological Report 1997 (pages enclosed)

The consequence of this omission has resulted in a 5 tonne Licence application turned into a 1,300 tonne Licence.

The 2009 EIS and this Review

The 2009 EIS for Licence P0606-03 does not cover any increase above 5 tonnes of Chlorine use and 0.3mg/l concentrations at the outfall.

There is also no request for an increase in Chlorine use and discharge and also no reasons why an increase in Chlorine amounts would be needed or required and crucially there is no information in the 2009 EIS as regards the effects of an increase of the magnitude 1,295 tonnes that the EPA granted in Licence P0606-03 on the receiving environment.

The review appears to be a backfilling exercise, the file is being filled with information that should have been in the 2009 EIS and used for the granting of Licence P0606-03 in 2011. The problem is that the information that is now being added is the result 6years use of Licence P0606-03 and bears no resemblance to the Estuary that was there 13 years ago and the 2009 EIS is the proof of that.

Instead of this review when the problems became known the unauthorised use of SW8 outflow and the massive amounts of Chlorine being used, the Plant should have been requested to cut back the levels of Chlorine to the levels that were originally stated and requested by them. Is it possible that the Plant cannot work on the originals levels that were requested?

The problems around the use of Licence P0606-03 for 6years have impacted the Licencing process, Planning process, The Environment and Humans. The biggest casualty in all of this is Waterford Estuary and especially the Habitat, Biodiversity and Species which are now only a fraction of what is described in the 2009 EIS. Shellfish in the 1997 Ecological Report has Mussels growing at the bridge outlet SW2, now they are just about extinct all around the Power Plant, what else is missing from 2009 EIS? Down at the Hook is the first mention of Mussels in any abundance in the latest surveys. Shellfish producers – Oysters in Woodstown are also on the verge of extinction.

For 40years the HFO Power Plant worked in harmony with the estuary as can be seen within the 2009 EIS and other documents from years. The Power Plant

management employed what could only be described as Best Available Techniques (BAT) in their use of Chlorine.

My question now is are the EPA going to do the right thing and stop the review along with the 1300 tonne use and discharge of Chlorine while all the other issues around Licence P0606-03 and the EIS are sorted out?

Hopefully I have called it right by calling what has happened, a mistake.

My complaint and query is based on information obtained from the following documents that I have attached with this letter:

A page from an application for a licence in 1978 from Great Island Power Station

A page from Great Island Power Station Ecological Report 1997

A page from Mr A Fanning's 2002 Memorandum

Select pages from EIS 2009 and EIS Appendix 3

Photo of local Mussel dieback since 2015

Yours sincerely

Pat Moran

1978

5. Details of provision made for sampling and measuring flow of effluent. — Intermittent manual sampling spill weir.

7. Particulars of any other discharges from the premises in question. — See attached Schedule.

8. Details of any special arrangements to prevent accidental discharges. — Oil traps on station drains retaining bunds on bulk oil tanks & Chem. tanks

9. Date of commencement of discharge. — 1967

10. Sewage Effluent (not applicable to discharges to sewers).

(a) Number of persons served — 160

(b) Anticipated dry-weather flow. — Constant.

11. Trade Effluent:

(a) Volume of Effluent to be discharged.

(i) Normal per day — (i) Load Dependent.

(ii) Maximum in any one day — (ii) 825.600 cubic meters

(iii) Maximum rate per hour — (iii) 34,400 cubic meters.

(b) The period or periods of the day in which the discharge is to take place — (b) Load Dependent.

(c) Any seasonal, or other variations (including any arising from plant malfunction), in volumes of effluent to be discharged. — (c) Flow is reduced during annaul overhaul periods on any unit. Occasionally, flow is reduced to zero during a complete station outage for a period of 1 or 2 weeks.

12. Particulars of effluent treatment employed or proposed.

The abstracted estuarine water is chlorinated during two periods per day, to give a residual free chlorine of 0.5 mg/lt. The length of chlorination periods are maximum 1½ hours.

3.1.2. Thermal impacts.

Most investigations of thermal impacts have concluded that the presence of a fish species in a thermal discharge area is directly related to their presence in adjacent colder areas. Langford *et al* (1979) showed that the residence times of individual fish in thermal discharge areas are not very long, and movement away from outfalls appears to be the result of natural mobility rather than avoidance or temperature selection. In fresh water, there is some evidence that species of coarse fish, mainly pike and bream, actively select thermal plumes at some times of the year, although stronger water currents in plumes may also be an attractant.

It has been suggested that thermal plumes may adversely affect migration of salmonids, but detailed studies have indicated little evidence to support the 'thermal block' hypothesis. In a large water body or estuary, the thermal plume generally 'floats' on the water surface, leaving a large proportion of the cross-sectional area of the water body unaffected by thermal discharge, as is the case at Great Island. In a confined channel where the entire cross-sectional area is affected, fish will migrate through the plume provided that the maximum encountered temperatures do not exceed the lower avoidance temperatures of the species involved, and do not coincide with the main period of migration.

The condenser cooling water discharge should not affect the migration of salmonids, particularly due to the major proportion of the estuary being unaffected by the thermal plume.

3.1.3. Impacts arising from the use of anti-foulants.

Acti-brom is used as an anti-foulant at Great Island Power Station. This proprietary biocide is dosed twice daily for c. 30 minutes before and after high tide when the plant is in operation. Dose rate is calculated to achieve a residual chlorine level of $0.2mg/l^{-1}$ (= 0.2 ppm) at the condensers. Residual chlorine at the cooling water outfall is 0.2ppm. Dilution occurs in the thermal plume.

Toxicity data for marine organisms exposed to residual chlorine not related to the chlorination of wastewaters, from data quoted by Irving and de L.G. Solbe (1980), are given below:

MR A Fagan
2002.

RESOURCE CONSUMPTION

The principal resources that will be used will be as follows:

Fuel

The principal inputs to the process are HFO or diesel. HFO is the primary fuel with diesel only used for start-up. The current sulphur content of the HFO is 1.8%. In addition, a 1.8 % Sulphur Fuel Oil from recovered bilge oil is planned to be used up to the end of 2002. From the 01/01/2003, only HFO with a sulphur content of 1% or less will be used at the facility.

Water

To supply the make-up needs of boilers, auxiliary cooling and for other purposes water is drawn from the Wexford County Council main. Cooling water is provided by the abstraction of estuarine water at a pump-house located near the jetty.

Chemicals

Bulk chemicals are used for boiler water conditioning and for regeneration of water de-ionisation plant. These are principally ammonia, hydrazine, sodium hydroxide and sulphuric acid. Chemical drum storage is on dedicated storage racks that incorporate bunds. Trisodium phosphate is used as a boiler water conditioner. Other chemicals are used in small quantities for laboratory tests and other purposes.

Electricity

Electricity is consumed for house load, mainly to provide motive power for pumps and fans associated with the generating plant. This amounts to about 5% of the electricity generated.

COOLING WATER SYSTEM

The cooling water is provided by the abstraction of estuarine water at the pump-house located near the jetty and returned via a discharge channel back to the estuary. It is required continuously while the plant is running and the rise in cooling water temperature from inlet to discharge is normally less that 12°C.

There are four pumps, with three normally in service. The pumps draw the cooling water at a rate of up to 50,170 m^3/h through a trash rake and band screens. These screens are continually washed with water to remove debris that has accumulated on them and the wash water containing the debris is discharged to SW8.

The cooling water, drawn from the estuary, is dosed twice a day for 30 minutes with Actibrom, a hypochlorite and sodium bromide containing anti-foulant, to control biological fouling and damage to the condensers. Dosing is carried out by manual injection. The dosing system is modulated to achieve residual chlorine of not more than 0.5mg/l at the outlet of the cooling water system.

ON-SITE WATER TREATMENT

Water is taken from the county council supply via a de-ionisation plant before being stored in the demin tank. From this tank the de-ionised water is fed to the reserve feed water tank for use in the boilers and in the hydrogen coolers of each generator.

The resins in the cation and anion units are regenerated using sulphuric acid and sodium hydroxide solutions respectively. The resins in the mixed bed unit are regenerated using both

Material/ Substance	CAS Number	Hazard	Amount Stored	Annual Usage	Nature of Use	Risk Phrase, R	Safety Phrase, S
Hydrogen	1333-74-0	Extremely flammable	105 bottles	510 bottles	Generator cooling	12	9-16-33
Ion Exchange Resins		None	None	As required	Water treatment		
Molybdate 3 Reagent		Irritant	15 litres	15 litres	Silica monitor reagent		
Nesslers Reagent (1.25% HgCl)4		Toxic	5 litres	5 litres	Laboratory analysis	35, 26-27-28-33	
Nicerol 3% protein foam concentrate			1000 litres	As required	Fire suppression		
Nitrogen	7727-37-9	None	60 bottles[3]	465 bottles[3]	Boiler waterside protection		
Oxygen	7782-44-7	Oxidising	10 bottles[3]	20 bottles[3]	Mechanical use	8	17
Propane	74-98-6	Flammable	1 tonne	2 tonnes	Ignition fuel	12	9, 16, 33
Propane	74-98-6	Flammable	6 Bottles	6 Bottles	Mechanical use	12	9, 16, 33
Sodium Hydroxide solution (30%)	1310-73-2	Corrosive	1 tonne	2 tonnes	WTP regeneration	35	26, 37/39, 45
Sodium Hydroxide solution (47%)	1310-73-2	Corrosive	30 tonnes	100 tonnes	WTP regeneration	35	26, 37/39, 45
Sodium Hypochlorite solution	7681-52-9	Corrosive	2 tonnes	5 tonnes	Cooling water treatment	31, 34	2, 28, 45, 50
Sulphuric Acid (Bulk)	7664-93-9	Corrosive	40 tonnes	100 tonnes	WTP regeneration	35	2, 26, 30
Sulphuric Acid	7664-93-9	Corrosive	1 tonne	2 tonnes	Neutralisation sump	35	2,26,30

The loss of containment of the other materials is also not considered to give rise to a major accident event. For instance, although some of the materials, such as the sodium hydroxide and sulphuric acid will be stored in large quantities of up to 30 and 40 tonnes, they are classified as being corrosive and their loss of containment would not constitute a major accident. The quantities of other materials, such as the hydrogen and acetylene, which are classified as extremely flammable and explosive respectively, will be stored in bottles well below their threshold levels of 10 and 5 tonnes respectively for lower tier Seveso sites.

EIS APPENDIX 3 PG 1

APPENDIX PAGES ALL HAVE ?

EPA - EXPORT 09-06-2021 - 02-46-52

BAT	Proposed Development
dissipated heat (<25°C) is to improve overall energy efficiency.	
In the case of rivers and/or estuaries once through can be acceptable if the extension of the heat plume in the surface water leaves passage for fish migration, the cooling water intake is designed aimed at reducing fish entrainment and the heat load does not interfere with other users of receiving surface water.	Screens are incorporated into the CW system.
Prevention and reduction of leakage of process substances into the cooling circuit.	The cooling water system is constructed of concrete, with the mechanical plant constructed of 316L stainless steel, condenser tube are constructed of titanium.
BAT is reducing the need for cooling water conditioning by reducing the occurrence of fouling and corrosion through proper design. In once-through systems, proper design is to avoid stagnant zones and turbulence and to maintain a minimum water velocity (0.8 [m/s] for heat exchangers, 1.5 [m/s] for condensers).	The velocity through the titanium tubes in the condenser will be approximately 1.5 - 1.8m/s. The velocity through the intake and discharge culvert is 2m/s.
For systems where different cooling streams are mixed in the outlet, pulse-alternating chlorination is BAT and can reduce even further free oxidant concentrations in the discharge. In general, discontinuous treatment of once-through systems is sufficient to prevent antifouling. Depending on species and water temperature (above 10-12°C) continuous treatment at low levels may be necessary.	An electrochlorination plant is not considered to be necessary due to limited mussel build-up in the CW system and the high energy and capital costs associated with such plant.
For seawater, BAT-levels of free residual oxidant (FRO) in the discharge, associated with these practices, vary with applied dosage regime (continuous and discontinuous) and dosage concentration level and with the cooling system configuration. They range from ≤ 0.1 [mg/l] to 0.5 [mg/l], with a value of 0.2 [mg/l] as 24h-average.	The proposed dosage rate of 5 litres per day is not considered to be significant. Dosage will be very infrequent.
Preventative maintenance and monitoring measures to prevent leakage e.g. leakage from heat exchangers, storage of chemicals.	Preventative maintenance and monitoring measures are currently, and will continue to be, implemented on site.
The near field is defined in a river as the area in which the mixing of the warm water plume with river water is incomplete. The water temperature in the near field depends upon the mixing of water released by the power plant with the water of the receiving environment. Heating can be reduced in this area by rapidly mixing the effluent with the water of the receiving environment by means of specific devices.	The existing plant has been operating for over 40 years and the new CCGT plant will dissipate considerably less heat to the Barrow Suir Nore Estuary.

14.5.4 Foul water

In accordance with BAT foul water, comprising sewage and domestic type waste water, emanating from the site will be treated in an on-site biological unit prior to discharge.

14.5.5 Surface Water Run-off

Surface water run-off will be discharged from all hardstanding areas via a silt trap and an oil / water interceptor. In general, hardstanding areas of the site will drain by gravity thereby minimising energy consumption. However, water collected in bunded areas (i.e. bulk storage tanks) will be required to be pumped (rather than gravity fed) in order to minimise the potential for contaminated water entering the drainage system. All bulk storage tanks will be fitted with automatic control systems to prevent overfilling.

All chemical conditioning materials required for boiler feedwater (i.e. aqueous Ammonia, Tri-sodium Phosphate and Carbohydrazide) will be stored under cover in UN approved containers. The chemical storage room will incorporate dedicated integral bunds. Spills and leaks will be cleaned by appropriately experienced personnel using absorbent materials. The waste arising will be disposed of off-site by appropriately authorised contractors.

the overall demand will be significantly reduced from the current maximum demand of 50,170/hr to approximately 20,000m^3/hr, when the CCGT is fully operation i.e. the volume will be reduced by 40%.

Cooling water will be screened through a series of fixed coarse screens and travelling fine screens, in order to remove debris from the cooling water prior to entering the pump chambers.

The screened cooling water will be pumped from the cooling water pumphouse to the steam turbine condenser and to the coolers of the closed cooling water system. The cooling water will then be discharged to the estuary via the existing outfall culvert.

In accordance with existing operations, cooling water will be chlorinated at the cooling water inlet by direct injection of Sodium Hypochlorite solution, as required, in order to control biological fouling of, and damage to, the condensers, principally by mussels which thrive in the conditions of fast flow encountered in warm cooling water systems. It is anticipated that approximately 5 litres per day of Sodium Hypochlorite may be used on occasions. Chlorine concentrations in the cooling water discharge will be maintained at a maximum concentration of 0.5 mg/l Chlorine measured at the cooling water outlet. It should be noted that use of biocides is currently very infrequent and this situation is unlikely to alter once the new CCGT plant has been commissioned.

It is intended to re-use as much of the existing cooling water (CW) system structures as possible (in accordance with Best Available Techniques, BAT). The allowable temperature rise through the cooling water system i.e. the difference between outlet and inlet) will remain unchanged at 12.0°C above estuarine water temperature. However, as the volume of discharge is anticipated to decrease from 50,170m^3/hr to 20,000m^3/hr the maximum thermal load is anticipated to decrease from the existing 352 MWth to 291 MWth.

14.4.4 Foul Water

A new collection system, separate from the surface water system, will be required to connect the proposed CCGT plant to the existing foul collection system and treatment plant. The area of the site containing the Above Ground Installation (AGI) will not generate any foul water.

As the existing foul water treatment system currently occupies the area of land proposed for the CCGT plant a new proprietary secondary treatment system is proposed. The specification of the proposed system will guarantee treatment of the waste water to a treatment standard of 25mg/l Biological Oxygen Demand (BOD), 35mg/l Suspended Solids (SS), 5 mg/l of Ammonia (as N) and 2 mg/l of Total Phosphorous (as P). The proposed system will be subject to maintenance contracts to assure compliance with the above standards. As there will be no net increase in the number of persons employed at the Great Island site over the present manpower levels, it is proposed that the new foul collection system for the CCGT will connect to the existing foul collection system discharging from the site via existing Outfall SW3.

During the construction phase temporary fully contained chemical portaloo toilets will be installed within the designated construction laydown area. It is anticipated that up to 35 portaloos will be required during the peak construction period, with each portaloo servicing approximately 14 construction workers. The contents of the portaloos will be removed from the site to an appropriately authorised facility.

14.4.5 Surface Water Run-off

Surface water runoff will consist mostly of rainwater, but with an allowance for spillages and wash water. As this has the potential to become contaminated with oily substances in some areas, oil interceptors will be included downstream of the proposed collection systems. Bypass oil interceptors will also include silt trap units which will remove any excess silt or grit which may become entrained in the surface water.

EIS.

- Contained chemical portaloo toilets will be used on site during the construction phase. All sewage will be removed from the site to an authorised treatment plant.

In addition, an intrusive contaminated land assessment will be undertaken prior to any construction works being undertaken. Any contaminated land encountered, which is considered to be at risk of mobilisation during the construction phase, will be removed to an appropriately authorised facility prior to construction activities commencing with prior agreement from EPA.

14.7.2 Operational Phase

Operational Phase mitigation measures are outlined hereunder.

- Appropriate limits for waste water discharges will be determined by the EPA under the IPPC licence which will be revised with due regard to the objectives of the WFD. The conditions of the existing IPPC licence will be complied with throughout the construction phase of the proposed development and any alterations provided in the revised IPPC licence will be complied with in full.

- A water quality monitoring programme will be developed for process waste water and surface water run-off. The parameters, thresholds and frequency required will be set by the EPA under the IPPC regime.

- All bunds and chemical containers will comply with the appropriate standards (e.g. BS:8007 *Code of practice for design of concrete structures for retaining aqueous liquids* (1987), Enterprise Ireland's *Best Practice Guide BPGCS005 Oil Storage Guidelines* etc.) and will be leak tested prior to commencement of operations and every five years thereafter, or as otherwise specified by the EPA.

- A Water Conservation Plan will be implemented for the proposed power plant during the operational phase.

14.8 Residual Impacts

14.8.1 Construction Phase

The implementation of mitigation measures as detailed above during the construction phase will ensure that the impact of the proposed development on water resources will not be significant.

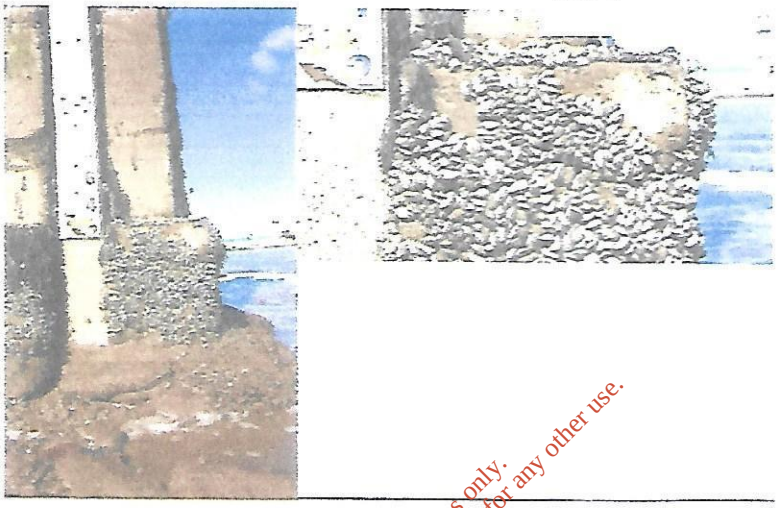
14.8.2 Operational Phase

The existing plant has been in operation since 1967 / 1968 and is a licensed activity under the IPPC regime, as regulated by the EPA and the proposed development is consistent with the existing activities on the site. The proposed discharges are of a similar physico-chemical nature to existing waste water however, the volumes will be significantly reduced. As detailed in Chapter 12 (Flora and Fauna), due to combinations of the proposed ecological mitigation measures, the magnitude of impacts and the positive changes from the current situation, the proposed activities will not have an adverse effect on the integrity of the sites or the qualifying features of the conservation objectives of the Natura 2000 sites. As a consequence the overall residual impact of the proposed development on surface waters during the operational phase is considered to be not significant, when compared with the existing situation.

14.9 Summary Conclusion

A desk-based assessment of the surface water quality and hydrology of the receiving environment in the vicinity of the proposed development, the predicted and potential impacts of the proposed development and

FIG 1



2015 ← NGG Power Plant Opened

2020 No mussels no

Evidence of Changes to Marine Environment (Shellfish Dieback) at Cheekpoint