10.3 Relationship between Short-Term Uses and Long-Term Productivity of the Human Environment

This Environmental Report has focused on the analysis and resulting conclusions associated with the environmental and socioeconomic impacts arising from activities during construction and operation of STP 3 & 4. For the purpose of the section, ”short-term” will represent the period from start of construction to the end of plant life, including prompt decommissioning, and “long-term” will represent the period extending beyond the end of plant life, including the period up to and beyond that required for delayed decommissioning. This section includes an evaluation of the extent to which the short-term uses preclude any options for future use of the STP site.

10.3.1 Construction of New Units and Short-Term Uses

Section 10.1 summarizes the potential unavoidable adverse environmental impacts of construction STP 3 & 4 and the measures proposed to reduce those impacts. There are adverse environmental impacts that will remain after all practical measures to avoid or mitigate the impacts have been taken. However, none of these impacts represent a long-term effect that will preclude any options for future use of the STP site.

STP 3 & 4 would be constructed on the STP site adjacent to STP 1 & 2. The STP site was originally selected to accommodate four units. Consequently, the size of the site, the capacity of the Main Cooling Reservoir (MCR), and the existing transmission rights-of-way are acceptable for STP 3 & 4.

The acreage disturbed during construction of STP 3 & 4 will be larger than that required for the actual structures and other ancillary facilities because of the need for construction laydown and support areas and a parking area for the construction workforce. It is important to note that the majority of this area was previously disturbed during the construction of STP 1 & 2. The clearance of this acreage, plus the noise of the construction, would displace some wildlife and destroy vegetation. Once construction of STP 3 & 4 is complete, the disturbed areas not used for plant operation will be restored. Wildlife will be expected to return to the restored area.

Some construction activities will increase the ambient noise levels in the vicinity of the site. However, upon completion of these activities, the ambient levels will return to the levels associated with the operation of STP 1 & 2. The workforce will be protected by adherence to the OSHA requirements for noise levels. There will be no effects on the long-term productivity of the STP site as a result of these impacts.

Construction-related traffic has the potential to cause congestion in the immediate area of the STP site and potentially cause deterioration to some of the roads. Potential mitigative measures including upgrades to intersections, staggering work shifts, and public notification of traffic congestion should reduce construction-related traffic congestion.

Construction of STP 3 & 4 will be beneficial to the local area through the generation of new construction-related jobs, local spending by the construction workforce, and payment of taxes to the area. The adverse socioeconomic impacts that occur as a result of increased population and construction activities will cease once construction

is complete and the workforce leaves the area. Benefits from increased tax revenues will persist into the foreseeable future.

The construction of STP 3 & 4 will not affect long-term productivity of the environment.

10.3.2 Operation of the New Units and Long-Term Productivity

Section 10.1 summarizes the potential unavoidable adverse environmental impacts of operation of STP 3 & 4 and the measures proposed to reduce those impacts. There are adverse environmental impacts that could remain after all practical measures to avoid or mitigate the impacts have been taken. However, none of these impacts represent a long-term effect that will preclude any options for future use of the STP site.

The STP site has already been developed as a location for an energy generation facility. The operation of STP 3 & 4 represents a continuation of the current and planned land use. Therefore, options for future use of the STP site, including operation of new energy generation facilities, are not precluded.

At the end of the plant's life, the STP site will be decommissioned, as required by the NRC, using one of the three approved decommissioning methods. Regardless of the specific decommissioning method used, the commitment of small amounts of land for radioactive material waste burial will be required. Potential long-term impacts to productivity of the site in those waste burial areas can be expected; however, the rest of the site would be available for future industrial or nonindustrial use. The maximum long term impact to productivity will result when the plant is not dismantled at the end of the period of plant operation, and consequently the land occupied by the plant structures will not be available for other use.

Operation of STP 3 & 4 will require additional water resources. The water used in plant operations and the makeup water for the MCR will be taken from groundwater wells and the Colorado River. Short-term impacts to water resources as a result of the operation of STP 3 & 4 are SMALL. Upon decommissioning of the site, use of local water resources will cease. Therefore, the use of water resources during operation of STP 3 & 4 will not impact the long-term productivity of the site.

Operation of STP 3 & 4 will require the consumption of nonrenewable resources, as discussed in Subsection 10.2.2. Consumption of these materials will cease upon decommissioning and does not affect the future productivity of the STP site.

The operation of fossil fuel-fired combustion equipment will increase air emissions during the operation of STP 3 & 4. Air quality impacts will be small because this equipment will be operated in accordance with Texas regulations for operating air emission sources and the emissions will be intermittent (less than approximately 100 hours per year). Additionally, the predicted salt deposition from the operation of the cooling towers at locations away from the immediate vicinity of the mechanical draft cooling towers would be less than the NUREG-1555 significance level where visible effects to vegetation may be observed. Once the plant ceases to operate and is decommissioned, impacts to air will cease. No future issues for the long-term uses of the site will result from the impacts of increased air emissions.

Chemicals and thermal pollution will be released to the Colorado River, in compliance with the Texas Pollutant Discharge Elimination System wastewater discharge permit. The releases will not adversely affect the Colorado River water quality during the operation of the plant. After decommissioning, releases to surface waters will cease.

Impacts due to radiological emissions will be SMALL because the operation of STP 3 & 4 will be in accordance with NRC regulations. Planned radiological emissions will not contaminate STP property or the surrounding land above NRC regulatory limits. Once the plants cease to operate and are decommissioned, radiological releases will cease. No future issues associated with the radiological emissions from operation of STP 3 & 4 will affect the long-term uses of the STP site.

High-level and transuranic radiological wastes will be disposed at a repository, such as the candidate repository at Yucca Mountain, Nevada (Subsection 5.7.6). However, this high-level waste may be stored in the interim on site, such as in the spent fuel pool or an Independent Spent Fuel Storage Installation located on site. This portion of the site will be unavailable for future use until the radiological wastes are transported offsite.

Socioeconomic changes, such as additional local infrastructure, brought about by the operation of the plant will likely continue after the plant is decommissioned. Property taxes paid by STPNOC to Matagorda County will provide significant revenues to the county for the foreseeable future, and will support greater county infrastructure and social service improvements. The Matagorda County population will increase during the life of the plant and will use the services provided as a result of STP-related tax revenues. Most of Matagorda County is agricultural, and provides little tax revenue to support county infrastructure and services. Therefore, taxes paid to Matagorda County will have a long-term positive effect on the productivity of the county.

10.3.3 Summary of Relationship between Short-Term Uses and Long-Term Productivity

The negative impacts of local use of the human environment by the installation, operation, and decommissioning of STP 3 & 4 is summarized in terms of the unavoidable adverse environmental impacts of construction and operation, summarized in Section 10.1, and the irreversible and irretrievable commitments of environmental resources associated with the project, summarized in Section 10.2. Except for the consumption of nonrenewable resources during the construction and operation of STP 3 & 4 and the land committed for waste burial, these impacts may be classified as short-term.

The principal short-term benefit resulting from the installation and operation of STP 3 & 4 is production of electrical energy and associated enhancement in regional economic productivity. The regional productivity resulting from the additional electrical energy produced by the plant is expected to result in a correspondingly large increase in regional long-term productivity that would not be equaled by any other long-term use of the site. In addition, most long-term impacts resulting from land-use preemption by plant structures can be eliminated by removing these structures or by converting them to other productive uses (NUREG-1555).

In conclusion, the negative aspects of plant construction and operation as they affect the human environment are outweighed by the positive long-term enhancement of regional productivity through the generation of electrical energy (NUREG-1555).