NIRB Application for Screening #125981

New Kugaaruk Power Plant

Application Type: New

Project Type: Power Plant

Application Date: 6/26/2024 9:49:56 PM

Period of operation: from 2030-01-01 to 2070-12-12

Project Proponent:

Environment Applications
Qulliq Energy Corporation
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DETAILS

Non-technical project proposal description

English: Qulliq Energy Corporation Environment Applications 3091 6th Street Baker Lake, Nunavut X0C 0H0 Canada Tel: 800-661-0858 envapplications@qec.nu.caKugaaruk Project StatementQulliq Energy Corporation (QEC) is a Government of Nunavut (GN) territorial corporation. Through the operation of 25 stand-alone diesel power plants, QEC is the sole provider of electricity to approximately 15,000 customer accounts in the territory. Qulliq Energy Corporation is proposing to construct and operate a new power plant in the Hamlet of Kugaaruk located in the Kitikmeot Region of Nunavut. Kugaaruk is a community with increasing demand for electricity, reflecting both its growing population and a per-household rise in power usage. The existing power plant was built in 1974 and has exceeded its design life. As the facility has aged and become increasingly outdated, it has become increasingly difficult to maintain, and plant dependability will become an issue. Unreliable equipment puts the entire hamlet at risk of long power outages. This proposed multi-year project will include a new four-engine power generation facility with installed capacity of approximately 2,500 kilowatts, designed for a life of over 40 years. It will incorporate new technology to improve reliability, efficiency, operation, as well as safety of operators. Environmental safety is also emphasized in terms of double-walled tanks, spill-containment berms, automatic sensors and alarms, and other features. Automatic fire suppression and other fire-safety features will also be included. The new plant will also enable easier replacement of generating units, therefore facilitating future expansions and upgrades. The electrical layout of the plant will enable easy integration of future renewables such as wind and solar, along with battery storage. The power plant will be equipped with a freshwater tank and a sewage tank, for domestic usage. Construction will include a fuel-storage system consisting of two double-walled 90-cubic-metre horizontal fuel tanks and fuel pumping facilities. QEC plans to construct a Quonset garage, transformer storage, pole racks, and oil and glycol drum storage and waste-disposal area with secondary containment berm. Space will be allocated for transient staff accommodations, sea cans for storage, and a back-up emergency generator. Upgrades to the existing distribution system will also be required to connect to the new power plant. A fuel-transfer pipeline, about 30 metres in length, will be constructed to connect to the Petroleum Products Division (PPD) bulk fuel facility adjacent to the site. The pipeline will also include features to guard against leakage. The proposed new lot is roughly 6,000 square metres located immediately adjacent to the PPD bulk fuel facility. The area proposed for the power plant has been designated by the Hamlet for industrial land use. The proposed lot was presented to and approved by the Hamlet of Kugaaruk. On March 11, 2021, a confirmation letter from the hamlet was received.There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location. An archaeological impact assessment was carried out in July 2021, and no cultural-heritage sites were found in the vicinity of the site. Employment-wise, on average, 22 workers are estimated to be required at the site for the duration of construction. This will fluctuate based on the construction phase. The contractor awarded the construction tender will determine the required labour force to meet project requirements. Contractors will be obligated to meet mandatory Inuit labour levels for all construction work. QEC has staff in Kugaaruk who are responsible for the daily operation of the existing vintage power plant. This includes a full-time Plant Superintendent, and two part-time Assistant Operators. Existing staff will transition over to the new power plant once it has been constructed and commissioned. No new indeterminate staffing is anticipated to be required as a result of this project. The majority of construction materials for the Project will be delivered by annual sealift. Some materials may be sourced locally or delivered via cargo plane, depending on size and quantity. The contractor will be responsible for sourcing construction equipment. This may include sub-contracting locally available equipment or bringing equipment to the community through the annual sealift. This project is anticipated to provide an overall benefit to the Hamlet of Kugaaruk with more efficient use of diesel fuel, as well as the resulting reduction of greenhouse gas emissions. It will also enable QEC to improve power-generation infrastructure in the community, support continued community growth and achieve its mandate for the provision of safe, reliable electrical power to the communities that it serves.

French: Énoncé du projet KugaarukLa Société d'énergie Qulliq (SÉQ) est une société territoriale du gouvernement du Nunavut (GN). Exploitant 25 centrales électriques autonomes alimentées au diesel, la SÉQ est le seul fournisseur d'électricité à environ 15 000 comptes clients dans le territoire. La Société d'énergie Qulliq propose de construire et d'exploiter une nouvelle

centrale électrique dans le hameau de Kugaaruk, situé dans la région de Kitikmeot, au Nunavut. Kugaaruk est une communauté où la demande en électricité est à la hausse, ce qui reflète sa population croissante et une augmentation de la consommation d'électricité par ménage. La centrale électrique actuelle, construite en 1974, a dépassé sa durée de vie théorique. À mesure que la centrale a vieilli et qu'elle est devenue de plus en plus désuète, elle est aussi devenue de plus en plus difficile à entretenir; par conséquent, sa fiabilité va poser un problème à un certain moment. L'équipement peu fiable expose l'ensemble du hameau à de longues pannes d'électricité. Le projet pluriannuel proposé comprendra une nouvelle installation de production d'électricité à quatre moteurs d'une puissance installée d'environ 2 500 kilowatts, conçue pour durer plus de 40 ans. Il incorporera de nouvelles technologies visant à améliorer la fiabilité, l'efficacité, l'exploitation et la sécurité des opérateurs. Le projet mettra aussi l'accent sur la sécurité environnementale au moyen de réservoirs à double paroi, de talus de confinement, de capteurs et d'alarmes automatiques et d'autres dispositifs. L'extinction automatique des incendies et d'autres dispositifs de sécurité incendie en feront également partie. La nouvelle centrale électrique permettra également de simplifier le remplacement des groupes électrogènes, ce qui facilitera les futures expansions et mises à niveau. L'aménagement électrique de la centrale permettra d'intégrer facilement les futures énergies renouvelables telles que l'éolien et le solaire, ainsi que le stockage dans des batteries. La centrale électrique sera équipée d'un réservoir d'eau douce et d'un réservoir d'eaux usées destinés à des fins d'usage domestique. La construction comprendra un système de stockage de carburant composé de deux réservoirs de carburant horizontaux à double paroi de 90 mètres cubes et d'installations de pompage de carburant. La SÉQ prévoit construire un garage de type Quonset, un entrepôt de transformateurs, des porte-poteaux, une zone de stockage des barils d'huile et de glycol et une aire d'évacuation des déchets dotée d'un talus de confinement secondaire. La construction disposera de locaux suffisants pour héberger le personnel provisoire, des conteneurs maritimes pour l'entreposage et une génératrice auxiliaire d'urgence. Il faudra aussi améliorer le réseau de distribution actuel pour assurer le raccordement à la nouvelle centrale électrique. Un pipeline de transfert de carburant d'environ 30 mètres de longueur sera construit et servira de raccord à l'installation de carburant en vrac de la Division des produits pétroliers (DPP). Le pipeline comprendra également des dispositifs pour protéger contre les fuites. La nouvelle zone proposée, située immédiatement à côté de l'installation de carburant en vrac de la DPP, est d'environ 6 000 mètres carrés. Le hameau a désigné les terres proposées pour la centrale électrique pour l'aménagement industriel. L'emplacement en question a été présenté au hameau de Kugaaruk et approuvé par celui-ci. La lettre de confirmation du hameau a été reçue le 11 mars 2021.L'emplacement proposé ne comprend pas de réserves d'espèces sauvages désignées, de zones de protection marines, de parcs territoriaux ou nationaux ou de terres inuites qui pourraient être incompatibles avec la centrale électrique. Une évaluation des impacts archéologiques a été réalisée en juillet 2021; aucun site du patrimoine culturel n'a été repéré à proximité du site. On estime que 22 employés en moyenne devront travailler sur le chantier pendant la durée de la construction. Ce chiffre variera en fonction de la phase de construction. Le maître d'œuvre qui obtiendra le contrat de construction à la suite de l'appel d'offres déterminera la main-d'œuvre nécessaire pour répondre aux exigences du projet. Les maîtres d'œuvre devront respecter les niveaux de main-d'œuvre inuite obligatoires pour tous les travaux de construction. À Kugaaruk, la SÉQ dispose de personnel responsable de l'exploitation quotidienne de la centrale électrique actuelle. Il s'agit d'un directeur à temps plein et de deux opérateurs adjoints à temps partiel. Le personnel actuel passera à la nouvelle centrale électrique une fois qu'elle aura été construite et mise en service. LA SÉQ n'anticipe aucune embauche supplémentaire d'employés nommés pour une période indéterminée à la suite de ce projet. La plupart des matériaux de construction du projet seront livrés par transport maritime sur une base annuelle. Certains matériaux, selon la taille et la quantité, pourront être achetés localement ou livrés par avion cargo. Le maître d'œuvre sera chargé de l'approvisionnement en équipement de construction. Cela pourrait inclure la sous-traitance de l'équipement disponible localement ou l'apport d'équipement à la communauté par l'entremise du transport maritime annuel. Ce projet devrait procurer un avantage global au hameau de Kugaaruk grâce à une utilisation plus efficace du carburant diesel et à la réduction des émissions de gaz à effet de serre qui en résultera. Il permettra également à la SÉQ d'améliorer l'infrastructure de production d'électricité dans la communauté, d'appuyer la croissance continue de la communauté et de réaliser son mandat de fournir de l'électricité de façon sûre et fiable aux communautés qu'elle dessert.

Inuktitut: ᑰᒑᕐᔪᖕᒥ ᐱᓕᕆᐊᒃᓴᖅ ᐅᖃᐅᓯᐅᔪᖅᑯᓪᓚᖅ ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐊᕕᒃᑐᖅᓯᒪᔪᓂᑦ ᑎᒥᖁᖅᑎᑕᐅᓯᒪᔪᑦ. ᐊᐅᓚᑦᑎᓂᒃᑯᑦ ᐊᕙᑎᓕᒧ ᑕᓪᓕᒪᓂᒃ ᐃᒻᒥᒃᑰᖅᑐᓂᑦ ᐅᖅᓱᐊᓗᓐᒨᖅᑐᓂᑦ

ᐊᐅᓚᐅᑎᖃᕐᕕᖕᓂ, ᖁᓪᓕᖅ ᐆᒻᒪᖅᑯᑎᓕᕆᔾᑯᑦ ᐆᒻᒪᖅᑯᑎᖃᖅᑎᑦᑎᔾᓪᓗᐊᑕᐅᕙᑦ 15,000 ᖃᓂᒋᔩᓂ ᐊᑭᓕᖅᓯᐃᕙᒃᑐᓂᑦ ᓄᓇᕗᒻᒥ. ᖁᓪᓕᖅ ᐆᒻᒪᖅᑯᑎᓕᕆᔾᑯᑦ ᓴᓇᔪᒪᖕᒪᑕ ᐊᐅᓚᑦᑎᓗᑎᒡᓗ ᓄᑖᒥ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒥᑦ ᑰᒑᕐᔪᖕᒥ Hᐋᒻᒪᓚᒃᑯᖕᒐᓂ ᕿᑎᕐᒥᐅᓂ ᓄᓇᕗᒻᒥ. ᑰᒑᕐᔪᒃ ᓄᓇᓕᐅᔪᖅ ᐅᓄᖅᓯᕙᓪᓕᐊᓪᓗᑎᒃ

ᐆᒻᒪᖅᑯᑎᖃᕆᐊᓖᑦ, ᓴᖅᑭᔮᖅᑎᑦᑎᓪᓗᑎᒃ ᑕᒪᐃᓐᓂᒃ ᐃᓄᒋᐊᒃᓯᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᐊᒻᒪ ᐃᖕᓗᒥᐅᖃᑎᖐᑦ ᐊᑕᐅᓯᖅ ᐆᒻᒪᖅᑯᑎᒥᒃ ᐊᑐᖃᑦᑕᖅᑐᑦ ᖁᑦᑎᒃᓯᕚᓪᓕᕐᓂᖏᓐᓂᒃ. ᑖᓐᓇ ᐊᐅᓚᐅᑎᖃᕐᕕᒃ ᓴᓇᔭᐅᓚᐅᖅᓯᒪᖕᒪᑦ 1974−ᒥᑦ ᐊᑐᕈᓐᓇᕐᓂᖓᓗ ᖄᖏᐅᑎᓯᒪᓕᖅᒍᓂ. ᐊᐅᓚᐅᑎᖃᕐᕕᒃ ᐊᑐᕈᓐᓇᐃᓪᓕᓕᖅᐳᖅ ᓄᑕᐅᔪᓐᓃᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᒍᓂᓗ, ᐋᖅᑭᐅᒪᑎᓐᓇᒋᒃᒍᒍ ᐊᔪᕐᓇᖅᓯᕙᓪᓕᐊᕗᖅ, ᐆᒻᒪᖅᑯᑎᖃᕐᕕᐅᓪᓗ ᐊᑐᕈᓐᓇᑦᑎᐊᕋᔭᕐᓂᖓ ᐃᓱᒫᓘᑕᐅᖃᑦᑕᖅᓯᒪᓕᖅᒍᓂ. ᐊᑐᕈᓐᓇᑦᑎᐊᕈᓐᓃᖅᑐᑦ ᐱᖁᑎᑦ Hᐋᒻᒪᓚᒃᑯᓐᓂᓕᒫᖅ ᐅᓗᕆᐊᓇᖅᑐᒦᑎᑦᑎᔪᓐᓇᖅᐳᑦ ᖃᒥᙵᑯᑖᓕᕈᓐᓇᖅᒍᑎᒃ. ᐅᓇ ᑐᒃᓯᕋᐅᑕᐅᓯᒪᓪᓗᓂ ᐊᕐᕌᒍᒐᓴᖕᓄᑦ

ᐱᓕᕆᐊᖑᓂᐊᖅᑐᖅ ᐃᓚᖃᕐᓂᐊᖅᐳᖅ ᓄᑖᕐᒥᒃ ᑎᓴᒪᓂᒃ ᐊᐅᓚᐅᑎᖃᖅᖢᓂ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒥ ᐃᓕᐅᖅᑲᖅᓯᒪᓪᓗᑎᒃ 2,500 ᑭᓗᕚᑦᔅ–ᓂᒃ ᐆᒻᒪᖅᑯᑎᖃᖅᑎᑦᑎᔪᓐᓇᖅᑐᑦ, ᓴᓇᓯᒪᓪᓗᓂ ᐅᑭᐅᑦ 40 ᐅᖓᑖᓂ ᐊᑐᕈᓐᓇᖅᖢᓂ. ᓄᑖᓂᒃ ᐱᓕᕆᔾᔪᑎᓂᒃ ᐃᓚᓕᐅᔾᔨᓂᐊᖅᐳᖅ ᐊᑐᖅᑕᐅᑦᑎᐊᒃᑲᓐᓂᕈᓐᓇᖅᓯᖁᓪᓗᒍ, ᑲᔪᓯᑦᑎᐊᒃᑲᓐᓂᓕᕐᓗᓂ, ᐊᐅᓚᑦᑎᐊᒃᑲᓐᓂᓕᕐᓗᓂ, ᐊᒻᒪᓗᑦᑕᐅᖅ ᐊᐅᓚᑦᑎᔨᑦ ᐊᑦᑕᕐᓇᖏᑦᑐᒦᓕᒃᑲᓐᓂᕐᓗᑎᒃ. ᐊᕿᑎᑦᑎᓐᓂ ᐊᑦᑕᕐᓇᖅᑕᐃᓕᒪᑎᑦᑎᓂᖅ ᓇᓗᓇᐃᖅᑕᐅᖕᒥᔪᖅ ᒪᕐᕈᐃᓕᖅᑲᖓᓂᖓᓄᑦ ᖃᑦᑕᐅᔭᖏᑦ, ᑯᕕᔪᒧᑦ ᓇᒧᙵᕈᓘᔭᔅᔭᐃᒃᑯᑎᒥ ᐊᕿᓗᓕᖅᓯᒪᓗᓂ, ᐃᒻᒥᓂᒃ ᖃᐅᔨᓴᕈᑎᖃᕐᓗᓂ ᖁᖁᐊᕈᑎᖃᕐᓗᓂᓗ, ᐊᓯᖏᓐᓂᓪᓗ.

ᖃᑦᑎᕆᑲᐅᑎᒋᓰᒥᒃ ᐱᑕᖃᕐᓗᓂ ᐊᓯᖏᓐᓂᓪᓗ ᐃᑭᑦᑕᐃᓕᒪᔾᔪᑎᓂᒃ ᐱᖃᓯᐅᔾᔨᓂᐊᕐᒥᔪᑦ. ᐊᐅᓚᐅᑎᖃᕐᕕᒃᑖᓵᖅ ᐊᔪᕐᓇᙱᓐᓂᖅᓴᒥᒃ ᐃᓇᖐᔪᓐᓇᖅᑎᑦᑎᓂᐊᖅᐳᖅ ᐊᐅᓚᐅᑎᖏᓐᓂᒃ, ᑲᔪᓯᑎᑦᑎᔪᓐᓇᖅᓯᓗᑎᒃ ᓯᕗᓂᒃᓴᑦᑎᓐᓂ ᐊᖏᓪᓕᒋᐊᕆᐊᖃᓕᕐᓂᖅᐸᑦ ᓄᑖᙳᕆᐊᖅᑕᐅᓕᖅᐸᓪᓗ. ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒥ ᐅᐊᔭᑦ ᐋᖅᑭᒃᓯᒪᓂᖓ ᐊᔪᕐᓇᙱᓐᓂᖅᓴᐅᓂᐊᖅᐳᖅ ᐃᓚᓕᐅᔾᔨᔭᕆᐊᒃᓴᖅ ᓯᕗᓂᒃᓴᑦᑎᓐᓂ ᐊᑐᒃᑲᓐᓂᕈᓐᓇᖅᑐᓂᒃ ᓲᕐᓗ ᐊᓄᕆᒧᑦ, ᓯᕐᑭᓂᕐᒧᓪᓗ ᐆᒻᒪᖅᑯᑎᖃᕐᓂᖅ, ᐊᒻᒪᓗᑦᑕᐅᖅ ᐹᑕᓖᖕᒐ ᑐᖅᑯᖅᓯᒪᓗᓂ. ᐊᐅᓚᐅᑎᖃᕐᕕᒃ ᐃᒪᑦᑎᐊᕙᖕᒧᑦ ᖃᑦᑖᓗᖃᕐᓂᐊᖅᐳᖅ ᑭᓈᓗᖃᕐᕕᖕᒧᓪᓗ ᖃᑦᑖᓗᖃᕐᓗᓂ, ᐃᓄᖕᓄᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ. ᓴᓇᔭᐅᓂᐊᕐᒥᔪᖅᑕᐅᖅ

ᐅᖅᓲᓯᕝᕖᖕᓂ ᒪᕐᕉᖕᓂ 90 ᓖᑕ ᓇᐸᔪᑦ, ᐅᖅᓱᐊᓗᖃᐅᑎᑦ ᐅᖅᓱᖅᑖᕐᕕᖕᒥᓪᓗ. ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᑦ ᐸᕐᓇᒃᓯᒪᔪᑦ ᓴᓇᓂᐊᕐᓗᑎᒃ ᓄᓇᓯᐅᑎᖃᕐᕕᖕᒥᑦ, ᐊᐅᓚᐅᑎᖃᕐᕕᒃ, ᓇᑉᐸᖅᑯᑎᒃᑯᕕᑦ ᐊᒻᒪᓗ ᐅᖅᓱᕐᒧᑦ ᑭᓂᖅᑐᓄᓪᓗ ᖃᑦᑕᐅᔭᖃᕐᕕᒃ ᐃᒋᑦᑎᕕᓪᓗ ᐱᖃᑖᓂ ᑯᕕᔪᒧᑦ ᓇᒧᖖᓕᕈᓘᔭᔅᔭᐃᒃᑯᑎᒥ ᐊᕙᓗᖃᒃᑲᓐᓂᕐᓗᓂ. ᐃᓂᒃᓴᓕᐅᖅᑕᐅᓂᐊᖅᑐᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᑐᔪᕐᒥᕕᒃᓴᖏᓐᓂᑦ, ᐅᒥᐊᕐᔪᐊᒃᑰᕈᑎᑦ ᐴᑦ ᑐᖅᑯᖅᓯᒪᕝᕚᑦ, ᑭᖑᕝᕙᐅᑎᔪᒃᓴᒥᓪᓗ ᑐᐊᕙᕐᓇᖅᑐᓄᑦ ᐊᐅᓚᐅᑎᑦ. ᓄᑖᙳᕆᐊᕆᐊᖃᓛᖅᑐᑦ ᐆᒻᒪᖅᑯᑎᖃᖅᑎᑦᑎᔾᔪᑎᑦ ᓄᑖᒧᑦ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒧᑦ ᐊᑦᑕᑕᖅᑎᑕᐅᓕᖅᐸᑦ. ᐅᖅᓱᖓᓄᑦ ᓱᓪᓗᓕᖕᒥᒃ, 30-ᒦᑕᓂ ᑕᑭᓂᓕᖕᒥᒃ,

ᓴᓇᔭᐅᔪᖃᕐᓂᐊᖅᑐᖅ ᐊᑦᑕᑕᖅᑎᑕᐅᓂᐊᖅᑐᒥᒃ ᐅᖅᓱᐊᓗᓕᕆᔾᒃᑯᑦ ᐅᖅᓱᐊᓗᖃᕐᕕᖕᒐᓄᑦ ᖃᓂᒋᔭᖕᒐᓃᑦᑐᒧᑦ. ᓱᓪᓗᓕᒃ ᐃᓚᖃᕐᓂᐊᕆᕗᖅ ᓇᐅᑦᑎᖅᓱᕈᑎᓂᒃ ᐃᕐᖖᒐᖅᑕᐃᓕᒪᔾᔪᑎᒥᒃ. ᓄᑖᖅ ᓄᓇᕐᑯᑎᑖᕆᔭᐅᔪᒪᔪᖅ 6,000 ᑭᑉᐹᕆᒃᑐᑦ ᒦᑕᓂᒃ ᑕᑭᑎᒋᐸᓗᒃᑐᖅ ᐅᖅᓱᐊᓗᓕᕆᔾᒃᑯᑦ ᐅᖅᓱᐊᓗᖃᕐᕕᖕᒐᓄᑦ ᖃᓂᒋᔭᖕᒐᓃᑦᑐᒧᑦ. ᐃᓂᑖᕆᔭᐅᔪᒪᔪᖅ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒧᑦ ᐋᖅᑭᒃᑕᐅᓚᐅᖅᓯᒪᕗᖅ Hᐋᒻᒪᓚᒃᑯᓐᓄᑦ ᓴᓇᕝᕕᐅᓛᕐᑐᓂ ᓄᓇᖕᒐ. ᐃᓂᑖᖖᒍᔪᒪᔪᑦ ᓴᖅᑭᑕᐅᓚᐅᖅᓯᒪᕗᖅ ᐊᖕᒋᖅᑕᐅᓪᓗᓂᓗ Hᐋᒻᒪᓚᒃᑯᓐᓄᑦ ᑰᒎᕐᔪᖕᒥ. ᒫᔾᔨ 11, 2021−ᒥ, ᓇᓗᓇᐃᖅᓯᔾᔪᑎᒥᒃ ᑎᑎᖅᑲᒥᒃ ᐱᑎᑕᐅᓚᐅᖅᐳᑦ Hᐋᒪᓚᒃᑯᓐᓂ.ᐃᓂᓕᐅᖅᑕᐅᓯᒪᖖᒋᑦᑐᑦ ᐆᒪᔪᕐᓄᑦ, ᐃᒪᕐᒥᐅᑕᓂ

ᓴᐳᑎᔾᐅᓯᒪᔪᓂ, ᓄᓇᕗᒻᒥ ᑲᓇᑕᒥᓪᓘᓐᓃᑦ ᒥᕐᖑᐃᖅᓯᕐᕕᖕᓂᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐃᓄᐃᑦ ᓄᓇᖁᑎᖏᑦ ᓈᒻᒪᙱᓕᐅᕈᑎᖃᙱᑦᑐᑦ ᐊᐅᓚᐅᑎᖃᕐᕕᒃᓴᐅᑉ ᐃᓂᖓᓂ. ᐃᑦᑕᕐᓂᓴᖃᕐᕕᖕᒥ ᐊᒃᑐᖅᑕᐅᔪᖃᕐᒪᖔᑦ ᖃᐅᔨᓴᖅᑎᑦᑎᓚᐅᖅᐳᑦ ᔪᓚᐃ 2021–ᖑᑎᓪᓗᒍ, ᐃᓄᖕᓄᓪᓗ ᓇᔪᖅᑕᐅᖃᑦᑕᖅᑐᕕᓂᕐᓂᑦ ᓇᓂᓯᔪᖃᓚᐅᙱᔅᓱᓂ ᖃᓂᒋᔭᖓᓂ. ᒫᓂᐸᓗᒃ, 22 ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᓴᓇᕝᕕᖕᒦᑦᑕᕆᐊᖃᕐᓂᐊᕋᓱᒋᔭᐅᔪᑦ ᓴᓇᔭᐅᓂᖓᓂᑦ. ᑕᒪᓐᓇ ᓂᑭᑦᑖᕈᑕᐅᓂᐊᖅᑐᖅ ᓴᓇᔭᐅᓂᖓ ᒪᓕᒃᓗᒍ. ᑳᑐᔮᒃᑖᖅᑎᑕᐅᔪᖅ ᓴᓇᔭᐅᓂᖓᓄ ᐊᑭᑦᑐᕋᐅᑎᓂᒃᑯ ᖃᐅᔨᔾᔭᑕᐅᓂᐊᖅᐳᖅ ᐃᖅᑲᓇᐃᔭᕐᑎᖃᕆᐊᖃᕐᓂᖏᓐᓂᑦ ᐱᓕᕆᐊᖑᔭᕆᐊᓕᑦ ᒪᓕᒡᓗᒋᑦ. ᑳᓐᑐᔮᖃᖅᑐᑦ

ᒪᓕᒋᐊᖃᕐᓂᐊᖅᑐᑦ ᐃᓄᖕᓂᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖃᕆᐊᖃᕐᓂᖓᓂ ᑕᒪᐃᓐᓂᓕᒫᖅ ᓴᓇᔭᐅᓂᖓᓂᑦ. ᖁᓪᓕᖅ ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑦ ᑰᒑᕐᔪᖕᒥ ᑲᒪᒋᔭᖃᕐᓂᐊᖅᑐᑦ ᖃᐅᑕᒫ ᐊᐅᓚᓂᕆᔭᖓᓂ ᓄᑕᐅᔪᓐᓃᖅᑐᒥᑦ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒥᑦ. ᐃᓚᐅᓪᓗᓂ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒥᑦ ᐊᖓᔪᖅᑳᖅ, ᒪᖀᒡᓗ ᐅᓪᓘ ᐃᓚᐃᓐᓇᖓᓂ ᐃᖅᑲᓇᐃᔭᖅᑏᑦ ᐃᑲᔪᖅᑎᖏᑦ. ᐃᖅᑲᓇᐃᔭᖅᑎᒋᔭᑦ ᓅᓛᖅᑐᑦ ᓄᑖᒧᑦ ᐊᐅᓚᐅᑎᖃᕐᕕᖕᒧᑦ ᓴᓇᔭᐅᕌᓂᒃᐸᑦ ᐊᑐᕈᓐᓇᕐᓯᑎᑕᐅᓗᓂᓗ. ᓄᑖᓂ ᐃᖅᑲᓇᐃᔭᖅᑎᑖᔾᔮᕋᓱᒋᔭᐅᙱᑦᑐᑦ ᑖᓐᓇ ᐱᓕᕆᐊᖑᓚᐅᖅᑎᓪᓗᒍ. ᓴᓇᔭᐅᓂᐊᖅᑐᑦ ᓱᓇᒃᑯᑖᖏᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᒧᑦ ᐅᒥᐊᕐᔪᐊᒃᑯ ᑎᑭᓰᖅᑐᑦ. ᐃᓚᖏᑦ ᐃᓚᒃᓴᐃᑦ ᓄᓇᓕᖕᓂᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ

ᖃᖓᑕᓲᒃᑰᖅᑎᑕᐅᓗᑎᒡᓘᓐᓃᑦ ᐊᖏᓂᖏᑦ ᐊᒥᓲᓂᖏᑦ ᒪᓕᒃᑕᐅᓗᑎᒃ. ᑳᓐᑐᓛᖃᖅᑎᐅᔪᖅ ᑲᒪᓂᐊᖅᑐᖅ ᐃᓚᒃᓴᖅᑖᖅᑎᑦᑎᔨᐅᓗᑎᒃ ᐱᖁᑎᓂᑦ. ᐃᒻᒪᖄ ᑳᓐᑐᓛᒃᑎᑦᑎᒃᑲᓐᓂᕈᓐᓇᕐᓗᓂ ᓄᓇᓕᖕᓂᑦ ᐊᑐᐃᓐᓇᐅᔪᓂ ᐱᖁᑎᓂ ᑎᑭᑦᑎᓗᓂᓘᓐᓃᑦ ᐱᖁᑎᓂᑦ ᓄᓇᓕᖕᓄᑦ ᐅᒥᐊᕐᔪᐊᒃᑯᑦ. ᐅᓇ ᐱᓕᕆᐊᖅ ᓂᕆᐅᒋᔭᐅᔪᖅ ᐃᑲᔫᑕᐅᓂᐊᕐᓂᖓᓂ ᕼᐋᒻᒪᓚᒃᑯᓐᓄᑦ ᑰᒑᕐᔪᖕᒥ ᐅᖅᓱᐊᓗᒃᑐᙱᓐᓂᖅᓴᐅᓕᕐᓗᓂ, ᐊᒻᒪᓗ ᐳᔪᕐᓗᖕᒥ ᐃᓯᐊᕐᑭᙱᓐᓂᖅᓴᐅᓕᕐᓗᓂ. ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᓐᓂᑦᑕᐅᖅ ᐱᐅᓯᕚᓪᓕᕈᑕᐅᓂᐊᖅᑐᖅ ᐆᒻᒪᖅᑯᑎᓄᑦ ᐊᐅᓚᔪᓐᓇᐅᑎᑦ ᓄᓇᓕᖕᓂᑦ, ᐃᑲᔪᕐᓗᑎᒃ ᓄᓇᓕᑦ ᐱᕈᖅᐸᓪᓕᐊᓂᖓᓂ ᐱᐊᓂᒡᓗᓂᔾᔪᒡᓗ ᐱᓕᕆᐊᒃᓴᑎᒃ ᐊᑦᑕᕐᓇᙱᑦᑐᒥᑦ, ᓈᒻᒪᒃᑐᓂᑦ

ᐆᒻᒪᖅᑯᑎᖃᖅᑎᑦᑎᓗᑎᒃ ᓄᓇᓕᖕᓄᑦ ᐱᓯᑦᑎᖅᑕᖕᒋᓐᓄᑦ.

Inuinnaqtun: Kugaaruk Havaakhaq TitirarhimayuqQulliq Auladjutiqhanut Kuapuraisinga (QEC) Nunavut Kavamanut (GN) ukiuqtaqtumi kuapuraisiuyuq. Aulapkaivaktut 25nik uqhurjuaqtuqtunik pauwaqarviinik, QEC-kut avaliittut tuniuqhaijiujut alrujaqtuutikhanik imaatut amigaittunut 15,000 atuqtiujut aviktuqhimajumi. Qulliq Auladjutiqhanut Kuapuraisinga uuktuqtut nappaqtirilutik aulapkailugitlu nutaamik pauwaqaqviaviqhamik Hamlangganni Kugaarjukmi ittuq Kitikmeot Avikturvianni Nunavunmi (havaaqhaq). Kugaaruk nunalaangujuq anginirmik alrujaqtuutikharnik piqaqtukhauliqtuq, tamangnun inugiarjumiligami igluqaqtuni atauhirmi atuinaqtun pauwaktuutikharnik. Hadja pihimayuq pauwaqaqvia nappaktauhimayuq 1974 mi tikiutigiplunilu igluqpaup atugaqhaatigut. Tamna pauwaqtuutivik utuqanguliqtumi nuutaangujungnaiqhunilu, ajungnautivalialiqtuq ihuaqhaijaangat, puawaktuutikhaq

ajungnautigivalianiaqtuq. Atuguminaitun ingilrutikhat ajuqhaqtitihimaarniaqtuq tamangnun hamlaatmun pauwaikvikhangit aularjumirniatun hivutunirmik. Una tughiqtaujuq amigaitunun-ukiunun havaaghaq ilaujuq nutaaq hitamanik-ingniqutiqaqtuq pauwaqtuut igluqpak iliuraqtauhimajuq aktilaanganik imaa 2,500 kilowattsmik, havagiikhimaniaqtuq auladjutikharnik avatqulugu 40nik ukiunik. Aulatitiniaqtuq nuutaanik alrujaqtuutikharnik ihuarjumirutikharnik atuguminaqtunik, ajurnaitumik , auladjutikharnik uminga qayangnairutikharnik aulatitihimaaqtunun havaktinik. Avatiliqijitkut qajangnairutikharnik naunairutiqarniaqtuq naunaitkutitigun malrungnik hanigaiqarluni qataqjuangit, kivugarviqagumi uqhuqjuanik avaliqidjutikharnik angijumik piqaqtukhaq, ilikkut aulajukharnik mihingnautiqaqtun ququurutitlu, allanik hunavalungnik piqarniaqtuq. Ilikkut aulajukharnik qaptiliqidjutikharnik piqarniaqtuq allaniklu qaptiliqidjutikharnik qajangnairutikharnik naunairutiqarniaqtun ilauniarhutiklu. Nuutaamik pauwaqtuutivikhaq naunairutiqarniaqtuq ajungnaitumik himautikharnik ingniqutikharnik, talvuuna aulatitijaangat hivunirmi angiklijumirutikharnik ihuaqhaidjutikharniklu. Alrujaqtuutikhangit iliugairvikhangit pauwaqtuutiqarvikharnik naunaijainiaqtun ajungnaitumik auladjutikharnik hivunirmi atuqtakharnik taimaitunik anurimi hiniqinirmilu pauwaktuutikharnik, tapkuninga baatuliikhat tutquqtirvikharnik. Pauwaqarvikhaq piqarniaqtuq imagiktumik imarmik qatarjunik anaqtautit qatarjumik, iglumi atuqhimaaqtakharnik. Nappaktirinirmun ilaliutihimajuq urhuqjuaqarvighaa malruk 90 litre urhuqjuaqarviik, urhuqjuamiklu-papautiqaqhuni igluqpak. QEC upalungaiqhimajut napaktiriami Quonset aqhaluutiqaqvikhanut, transformer mik tamayaqaqviqaqluni, naparialgit tutquumiviqhainnik, kingiqtaq glycolmik qattaryuarmiklu tamayaqaqviqaqluni iqqakuuqviqhaqaqluni tuglianilu Qatarjuangit najugakhaanik kuviliatkutikhangit. Najugahait nuutiqtauhimajut havaktinun hiniktarvighait, umiakkut uhidjutit, parnallu ingniqqut. Ihuaqhaidjutit atuqtaujunun auladjutinun pijariaqarniaqtuq ataliqluni nutaamun pauwaqarvingmun. Uqhuarnik nuutirutikharnik tuqhuanik, naamavjaktuq 30-miitanik urhuqjuamun tughuanga havaktauniaqtuq ataliriangnai Urhuqjualiqijiit Havagvianun (PPD) urhuqjuamik tutquumaviinun najugarmi. Tuqhuqjuangit ilaliutihimaniaqtait naunaitkutingnik munagidjutiqarluni kuhiqtaqtuqaqqan. Tukhikhimajuq nuutaaq nuna najugakhaa anginiqaqtuq taima 6,000 kikkariktuq miitanik najugalik haniani PPDkut qatarjuangit najugaini. Najugaa tughiqtaujuq pauwaqarvighamun tikuaqtauhimajuq haamlatkunin havagvikjuanun nuna atugahaq. Uuktuutaa tuniyauyuq an’ngiqtaupluni Hamalatkunnit Kugaarukmi. Qiqaijalirvia 11, 2021, pijagiikhimaliqtun titiraqharnik hamlaatkutnin.Piqangittuq huradjat najugaanik, imarmiuniklu, avikturviuvimi Kanadamilu min’nguirviinnik Inuit nunagijainnikluunniit hulaqutikpat pauwaqarvikhaannik najugakhanik. Ingilraarnitarnik nalvaaqhiutiit ajungnautiqagianganik ihivriudjutikharnik aulavakhimajuq Taaqhivaliavia 2021mi, piqangitun pitquhiliqinikkut ingilraarnitangnik najugaqangitun talvani najugakhaani. Havaktiqarnikkut mikhaatigun, qaffiuniit, 22 havaktit tikuaktauniaqtun ihariagijauniaqtut najugaani napaqtitirtilugit. Aadjikkiilimaittuq nampait havaktiqhanik nappaktiliqata. Kaantraaktitauyuq ihumaliurniaqtuq kaffiuyaaqhainnik havaktiqarniaqtuqhanik tikiutiyaami iniktirutaa havaaqhami. Katulaaktut pijaghaqarniaqtut pitqujaunirmun Inuinnarnik havaktitilutik tamainun napaqtitirnirmun havaaghanun. QECkut havaktiqaqtun Kugaarukmi munagihimaaqtun ubluq tamaat auladjutikharnik talvani utuqangumik pauwaqarvingmi. Ilaliutilgitlu havainnaktumik Pauwaqaqviami Atan’nguyamik, malruungnik havakaffuktunik Ikayuqtiuyunik. Havaktut hadja nuutiqhun’nguyut nutaamun pauwaqaqviannut iniktiqqat. Nutaanik havaktiqalimaittut haffumunga havaakhamun. Amigaingniatigut nappaktirinirmun tamayait Havaaqhamut agyaqtauniaqtut umiakkut. Ilangit tamajait niuviktauniaqtun nunanganit agjaqtaulutikluunniit tingmitikkut naunairutilugit aktilaangit kaffiutilangillu. Kantraaktitauyuq munariyaqarniaqtuq naunaiqlugit tamayanik atuqtaqhanik nappaktiliqqat. Ilaliutiniagungnaqhiyuqlu aadlamik kaantraaktitauyuqhamik nunainnagiyauyumi in’ngilragutikkut tamayanik talvunggaqtitaulutikluunniit nunallaamun umiakkut. Una havaakhaq niriuktaujuq tunihiluni tamainun ikajuutinik Haamlanganun Kugaarukmi ihuatqiamik atungniranun urhuqjuanik mikhijuumiqrutijuqlu pujuqmik tingivralaaqtumik. Pipkainiaqtullu QEC-kunnut nakuuhivalliadjutikhaanun pauwaqautikkut nunallaami, ikajuutikhanik amigaikpallianingat nunanganut, tikiutilugulu hivunikhaliuqtat qajangnaittumik, ihuaqtumik pauwakhainnik nunanganut kivgaqtuqhimaaqtamingnut.

Personnel

Personnel on site: 30
Days on site: 200
Total Person days: 6000
Operations Phase: from 2026-05-05 to 2029-11-11

Operations Phase: from 2030-01-01 to 2070-12-12
Post-Closure Phase: from to

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Kugaaruk New Plant Site	Equipment installation	Commissioners	Undeveloped land, designed as industrial by the municipality	None	Over 1 kilometre
Kugaaruk New Plant Site	Fuel and chemical storage	Commissioners	The proposed lot is within the Municipality of Kugaaruk and has been designated for industrial land use.	An archaeological impact assessment was carried out in Summer 2021 to determine if there are any archaeological sites are in potential conflict with the project. None were found. The Archaeological study was done by Golder/WSP, and it was reviewed by GN Culture and Heritage.	Within the Municipality of Kugaaruk, east of the community, and outside of the core community area. There are no designated wildlife areas, marine protected areas, territorial or national parks, or Inuit Owned Lands in conflict with the proposed power plant location.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Kugaarjuk	Hamlet of Kugaaruk	Kugaaruk Hamlet Council Motion	2021-03-11
Kugaarjuk	Public Presentation at Kugaaruk July 29 2020	Hamlet of Kugaaruk	2020-07-29

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Transport Canada	Aeronautical application in progress, as per standard procedure.	Active		
Other	Hamlet approval	Active		
Other	NavCanada Aeronautical Assessment	Active		
Other	Nunavut Airports Aeronautical Assessment	Active		
Government of Nunavut, Community Government & Services	Liaison and agreement from PPD (division of CGS) for fuel-transfer pipeline from PPD tank farm. (Pipeline will only be carrying fuel for one day every six weeks, in order to fill our two 90,000-litre onsite fuel tanks.)	Active		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	Sealift of materials for building new power plant	
Land	Trucks from sealift area to power-plant site	

Project accomodation types

Community

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Construction machinery	10	10x3 metres	Construction machinery such as backhoes, excavators, front-end loaders, telehandlers, forklifts, graders, concrete mixers, welders, bulldozers, air compressors, dump trucks, towable gensets, and a portable truck-mounted crane. These will be used during the two-year construction phase of the project.
Power generation equipment	5	6x2m	Generators which will be present in the completed power plant. There will be four main generators (gensets), along with one backup generator or black-start generator. All dimensions are approximate

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	1	4000	4000	Liters	Diesel fuel for construction machinery (as listed above), during the two-year construction phase of the project. Construction will extend over two calendar years, with work proceeding during non-snow periods. The portable fuel tank, of approximate size 4,000 litres, as provided by the contractor, will have built-in secondary containment.
Diesel	fuel	2	90000	180000	Liters	This is the diesel

						fuel that will be powering the power plant's generators, once construction is complete. The fuel will be kept in two large (90,000 litres each, therefore 90 cubic metres each) double-walled steel tanks. This project will also include a pipeline from the local PPD tank farm, for fuel transfers which will occur roughly every six weeks.
Glycol coolant	hazardous	5	205	1025	Liters	Engine Coolant
Engine Lube Oil	hazardous	5	205	1025	Liters	Lubrication of Engines

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	Because this plant uses radiators for cooling, the only use of water is for domestic use of employees on site. Estimated at 0.1 cubic metres per day. No water license required.	Tanked municipal water supply, with tanked sewage (honey truck, standard in communities throughout Nunavut).

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Other	Combustible wastes	10 kilograms a month	These are standard non-hazardous wastes, including office paper, empty cardboard boxes, and other everyday wastes.	To be disposed of at standard municipal landfill.
Other	Combustible wastes	1000 litres per year	All wastes from engines (e.g. waste engine oil, waste coolant) will be drummed and stored in specially lined sea-cans. At annual intervals, the drums are shipped out (strapped to pallets) via the annual sea-lift. In this way, the waste fluids are disposed of in southern Canada.	Waste engine oil is re-refined into new-oil by a re-refiner.
Equipment installation	Combustible wastes	100 litres per year	Waste oil from construction machinery will be drummed and shipped out for disposal by the Contractor in charge of construction work.	Waste will be shipped out via sealift in drums, as per standard procedure for waste engine oil and other machinery-related liquids.
Equipment installation	Non-Combustible wastes	5 cubic metres	All construction projects generate leftover materials and other wastes (e.g. end cuts and other pieces). These wastes are harmless and can easily be disposed of in the municipal landfill. Any materials that can be reused or recycled will be reused or recycled to the extent possible.	We reuse and recycle as much as possible. Extra materials are also kept at the plant for future repairs (e.g. spare paint, extra sheets of siding, etc.).
Other	Sewage (human waste)	80 litres per day	Standard human waste (sewage) from toilet and sink, as used by staff.	Waste is stored in standard sewage tank and is pumped out at intervals by the local municipal

				pump-out truck. The sewage is treated in the lagoon by the municipality, as per standard procedure.

Environmental Impacts:

Please refer to the Nontechnical Project Descriptions (provided in all four Nunavut official languages), as well as to the Additional Information Section. The operational impacts are described in comparison to the existing power plant. Here are a few overall points: - Noise and dust during construction will be mitigated by contractor keeping equipment in good working condition, by using water spray to control dust, and by working during normal daytime hours only. - Spill-capture equipment and double-walled fuel tanks will be in use, both during construction and operation. Our Contractor will be required to have a fuel-management plan and to be fully equipped with spill-containment equipment. Construction workers will be required to have training on spills prevention and spills management. - Our employees are extensively trained on spills prevention and spills cleanup. - Tanked water will be used at the plant, and sewage will be tanked. - Power plant will use the most modern engines for lowest emissions, and emissions controls will be included. This power plant will bring a net positive benefit to the community by ensuring less pollution than the old power plant that it replaces. Noise will also be greatly reduced, both because the engines are newer and because the plant is no longer downtown. Power supply will be more reliable as well. - QEC is designing all its new plants to accommodate future addition of renewable energy sources (e.g. wind and solar). This will further reduce the impacts of the burning of diesel fuel.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

The area proposed for the power plant has been designated by the Hamlet as industrial land use and was the location previously identified by the Hamlet for the power plant. This implies that the Hamlet is interested in or is willing to consider some form of development in this area. •Surrounding development in this area is industrial in nature (e.g., PPD bulk fuel facility). •Given that the proposed power plant will be on an existing road and in close proximity to the PPD bulk fuel facility, community members or wildlife using this area will already be accustomed to traffic activity in the area. •The location selected for the power plant is generally flat terrain and is geologically amenable to construction. •Our plant does not entail any water-takings, nor in-stream works, nor any discharge of waste to these small water features. We note that our use of diesel generators uses radiators to air for cooling. Our domestic water usage the plant will entail a freshwater tank along with a sewage tank, both serviced via truck. Construction activities will also entail tanked water, with portable toilets for employees. The contractor will also be required to ensure that surface disturbance (e.g. disrupted soils) are not able to run off the site. For this purpose, standard silt fences are anticipated to be used. •There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location.

Description of Existing Environment: Biological Environment

There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location. The land is designated industrial and does not constitute special-value habitat for birds or other wildlife. That being said, it is acknowledged that terrestrial and marine wildlife may be observed in the general surrounding area, especially by observers equipped with tripod-mounted spotting scopes, high-powered image-stabilized telephoto lenses, and high-resolution digital single-lens-reflex cameras, or with other sophisticated optical imaging devices.

Description of Existing Environment: Socio-economic Environment

The proposed power plant will be located about 1 kilometre from the centre of the hamlet, and it is not upwind of the hamlet. This alleviates concerns regarding noise and emissions. Also, the design of the plant incorporates the latest emissions-control technology (particulate filters with dry oxidation catalysts) with modern diesel technology that minimizes fuel consumption and minimizes emissions. The exhaust systems will include mufflers (also known as silencers) that are of "hospital-grade" for the greatest possible attenuation of sound throughout the frequency range typical of reciprocating internal combustion engines of the compression-ignition type. •An archaeological impact assessment was carried out in the summer of 2021. No archaeological sites were found on the site nor within 200 metres of the site. •In the event that latent cultural or archaeological artifacts are encountered during the construction at the site, construction activity will stop and the Government of Nunavut Department of Culture and Heritage will be contacted. •During the construction work (estimated to take place over two summers), the contractors will be required

to maintain equipment in good working order to reduce noise generation, and to avoid spills of fluids. •Construction will occur during typical working hours (e.g., 10 to 12-hour shift). •Dust suppression (e.g., water) will be used on-site during construction as required. •Other development in the surrounding area is industrial in nature. With this in mind, it is likely that community members nearby are already accustomed to some level of dust and noise emanating from this general area, due to the combination of the existing gravel roads and the general industrial and other activities that take place here. •Contractors will be required to have a spill response plan as well as spill response equipment and materials available in the event of a leak or spill. •In the event of a spill or leak, contaminated soil will be collected for disposal at an approved facility •Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable. They will also be required to carry insurance in this regard.

Miscellaneous Project Information

•The old power plant will be decommissioned within one year of the commissioning of the new power plant at Kugaaruk. Decommissioning of the old power plant is a separate project. •The new site at Kugaaruk is an open lot and is readily viewable in Google Maps. •For emergencies pertaining to spills of fuels and other liquids, QEC has site-specific spill response plans for each of our 25 power plants. We will be preparing such a plan for the Kugaaruk new power plant when construction of the new plant has been completed. •During the construction work, the construction firm will follow its own environmental management plan. This will include features such as double-walled fuel tanks for storing equipment for construction equipment, as well as having spill-clean-up equipment readily available. •All of QEC's power plants in this size range have dual-walled fuel tanks that have leak-detection monitoring via interstitial vacuums. Additional electronic leak-detection systems are present throughout the fuel system, thereby providing coverage of the tanks outside the building as well as the day tanks inside the building. These systems also interface electronically with the engines, which themselves keeping a running log of the fuel that they have consumed. Therefore, our operators are kept up-to-date on the remaining fuel levels in the tanks, as a function of fuel fillings and daily consumption. •Filling of the tanks can be done via tanker truck or by pipeline direct from the PPD tank farm. Various spill-containment and monitoring devices are present throughout the entire process. •Waste fluids are stored in drums that will be kept in sea-cans with their own built-in containment linings and berms. •The entire plant will be surrounded by a chain-link fence with a gate, to provide physical security. The plant itself will also have its own electronic security, in addition to a variety of security features including sensors and cameras with remote monitoring and automatic summoning of emergency response. •This comprehensive approach to security is to ensure reliable power and to defend against intrusions via physical and non-physical means. •Staff on site, during operation, includes two or three employees with regular hours.

Identification of Impacts and Proposed Mitigation Measures

•During the construction phase, contractors will be required to have a spill response plan as well as spill response equipment and materials available in the event of a leak or spill. •In the event of a spill or leak, contaminated soil will be collected for disposal at an approved facility. •Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable. •During the operation phase, •In the event of a spill or leak, contaminated soil will be collected for disposal at an approved facility. •Contractors will be required to have a fuel management plan in place that includes refueling procedures and proper bulk storage if applicable.

Cumulative Effects

For all of the reasons described in the preceding sections, the cumulative effects of this power plant are expected to be smaller than those of the existing in-town power plant at Kugaaruk.

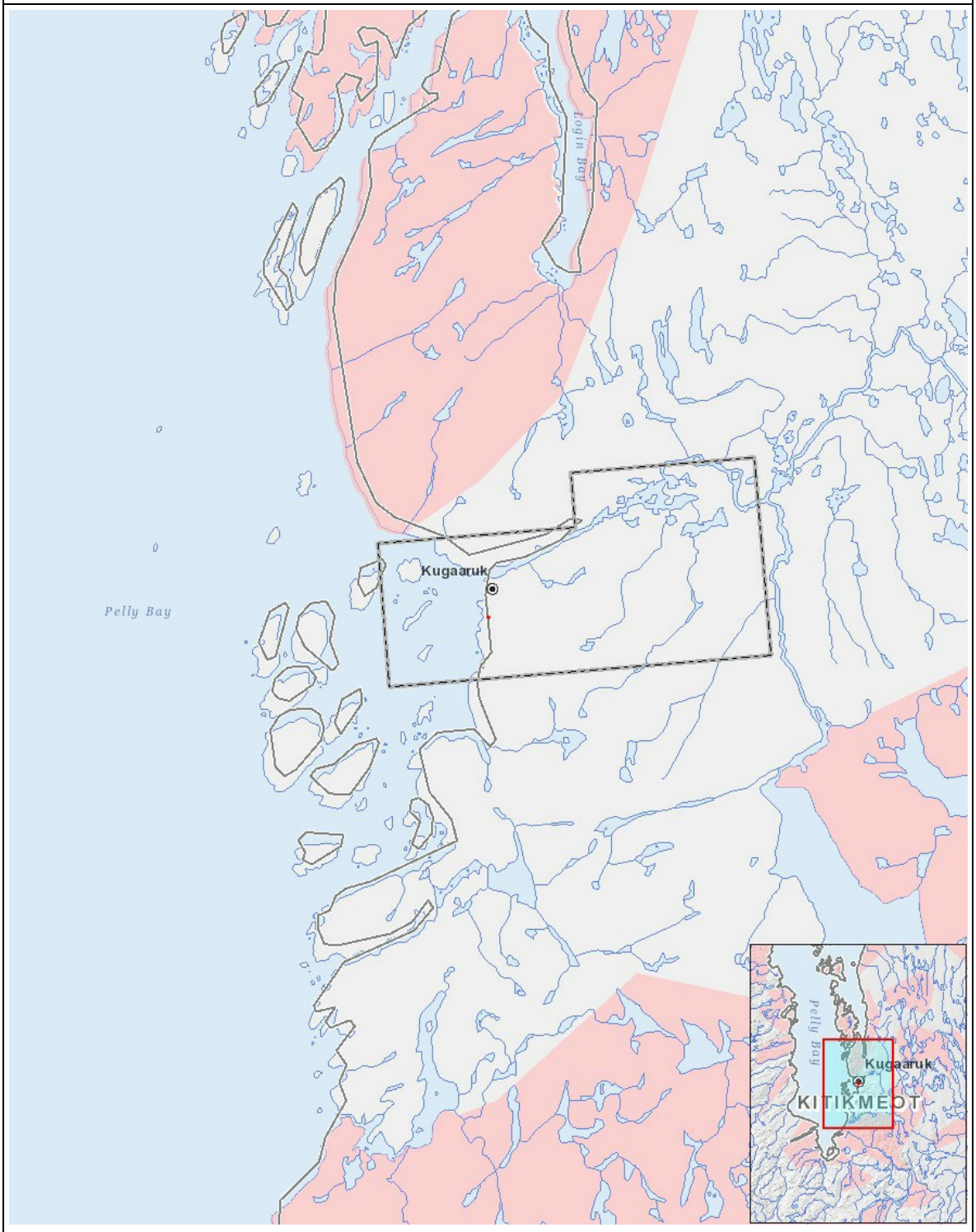
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																									
Equipment installation		N	N	N	-	N	N	N	N	N	N	N	N		N	N	N	N	N		N	P	N	N	N
Operation																									
Equipment installation		N	N	N	-	N	N	N	N	N	N	P	P		N	N	N	N	N		N	N	P	P	P
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	polygon	Kugaaruk New Plant Site