

1 Purpose

Everyone entering the refinery area have to comply with the safety regulations for the refinery. Non-compliance can lead to refusal of entry. This document describes the general safety regulations applicable at the refinery in Nynäshamn.

2 Scope or application area

Applicable to the whole refinery area in Nynashamn.

3 Definitions

Refinery area - the whole area where Nynas AB is active and that is bounded by an outer fence and that includes the harbour area and Brunnsviksholme but excludes the areas leased by Fortum and AGA respectively. The tank farm area southwest of Oljebergsvägen is outside the scope of this document as it is within the Statoil area.

See attached file Generell etabl.plan m vägnamn eng

4 Safety Regulations for the Nynäshamn Refinery

Table of contents:

1	Purpose	1
2	Scope or application area	1
3	Definitions	1
4	Safety Regulations for the Nynäshamn Refinery	1
4.1	General	3
4.1.1	Background and scope	3
4.1.2	Responsibility for coordination of HSE issues regarding contractors, consultants etc	3
4.2	Entry to and exit from the refinery area	4
4.2.1	Entry and exit through gates, turnstiles and doors	4
4.2.2	Age limits	5
4.2.3	Dogs and other pets	5
4.2.4	Access cards and identity checks	5
4.2.5	Visitors	6
4.2.6	Access to process and tank park areas	7
4.3	Traffic regulations	8
4.3.1	General	8
4.3.2	Speed	8
4.3.3	Parking	8
4.3.4	Driving permit within the area	9
4.3.4.1	Driving within the process and tank farm area	9
4.3.4.1.1	Amendment for driving in the inner process area	10
4.3.5	Fork lift trucks	10
4.3.6	Driving certificates	10
4.3.7	Deregistered or unregistered vehicles	10
4.4	General rules of conduct	10
4.4.1	Housekeeping and General care	10
4.4.2	Smoking	10
4.4.3	Photography	11
4.4.4	Radios, telephones, tape recorders etc.	11

4.4.5	Alcohol and drugs	11
4.4.6	Theft	11
4.4.7	Waste management / cleaning.....	11
4.4.8	Contractors' access to Nynas workshops or storage facilities	12
4.4.9	Staff rooms for contractors, cabins and storage rooms (temporary buildings)	12
4.5	Personal protective equipment	12
4.5.1	General	12
4.5.2	Hard hats	13
4.5.3	Escape mask (hydrogen sulphide, sulphur dioxide, hydrocarbons).....	13
4.5.4	Eye protection	13
4.5.5	Life jackets	13
4.6	Work permits.....	14
4.6.1	General	14
4.6.2	Fire guard in connection with hot works.....	14
4.6.3	Work in confined areas and pits	14
4.6.4	Working with explosives (blasting)	14
4.6.5	Overtime work for contractors	14
4.7	Special risks and rules	14
4.7.1	Safety instructions nitrogen.....	14
4.7.2	Safety instruction hydrogen sulphide.....	15
4.7.3	Safety instruction oxygen.....	15
4.7.4	Work with chemicals.....	15
4.7.4.1	Microorganisms and infection	15
4.7.5	Work at height.....	16
4.7.6	Scaffolding	16
4.7.7	Use of lifting crane.....	16
4.7.7.1	Lifting of persons	16
4.7.7.2	Other lifts	16
4.7.8	Gas tubes	16
4.7.9	Work machines.....	16
4.7.10	Cordoning off	16
4.7.11	Electrical equipment.....	17
4.7.12	Check after work completion	17
4.8	Fires, accidents and alarm	17
4.8.1	Raising the alarm (fire, accident, sudden illness or other emergency)	17
4.8.2	How to act in an emergency	18
4.8.3	Alarms and signals in the process area.....	18
4.8.3.1	Local evacuation alarm in process plants	18
4.8.3.2	Evacuation alarm for the process area	18
4.8.3.3	Other signal systems	19
4.8.3.4	Special regulations for PG at evacuation alarms	19
4.8.4	Fire alarms in buildings.....	19
4.8.5	Other alarms in buildings	19
4.9	Environment.....	19
4.9.1	How am I affected by Nynas' environmental work	19
4.9.2	What do I do if I spill oil or chemicals?.....	19
4.9.3	How do I sort my waste?.....	20

4.1 General

4.1.1 Background and scope

The safety regulations apply to everyone within the refinery area.

Flammable and combustible materials of all classes are handled, stored and transported within the refinery area. Certain risks therefore exist that are not present in many other industries. These risks have been addressed in special legislation such as the Flammable and explosive materials act. Based on this, and other HSE legislation, the refinery management has established safety regulations and rules of conduct.

A safe working environment does not come about without effort. It is created when we

- cooperate;
- loyally comply with directions and regulations; and
- think before we act ("Take Two").

Among other things, this means that each and every one of us has an obligation to immediately report any suspicion of gas leakage (including alarms from gas detectors), oil leakage, fire hazard, personal danger, breach of safety regulations, etc to the management, the project manager or the Shift Supervisor.

No activity may be carried out unless all individuals involved are aware of the contents of the refinery's safety regulations and undertakes to comply with them. Also, all activities shall be performed in compliance with Swedish law, as for example the Environmental Code, the Work Environment Act and the Swedish Work Environment Authority's regulations for the purpose of preventing harm to people, environment and property.

All employees within the refinery area shall possess appropriate knowledge of the safety regulations and applicable laws and regulations concerning safety, health and environment. In this context, 'appropriate knowledge' means sufficient knowledge to be able to perform the assigned work in a safe manner.

Each line manager shall ensure that his/her employees are provided with the appropriate knowledge of the laws and regulations, that these are complied with and that his/her employees have training as defined in section 4.2.4.

4.1.2 Responsibility for coordination of HSE issues regarding contractors, consultants etc

When several companies/employers are performing work simultaneously in a work place, they must cooperate to ensure safe working conditions. Nynas AB is responsible for coordination of the work environment tasks. The name of the appointed responsible person can be found on work permits and information screens within the refinery.

Nynas is responsible for ensuring that the work environment tasks are coordinated and to appoint an individual, referred to as the WEA Coordinator, within the refinery organisation, unless otherwise agreed. The WEA Coordinator is responsible for that Nynas HSE related measures are in place at the work place and that all concerned have received information about the risks and measures relevant to the work at hand. No project/work may be started without an appointed WEA Coordinator.

Planning and execution of construction or civil engineering work requires that a safety coordinator is appointed. One with responsibility for coordination during the planning phase (BAS-P) and one with responsibility for coordinating the execution stage (BAS-U). As well as the WEA Coordinator these are appointed by Nynas unless otherwise agreed.

All contractors still retain their employer's and work environment responsibility in relation to their own employees. This includes, among other things, providing personal protective equipment, ensuring compliance with Nynas safety regulations, reporting of accidents and incidents to the WEA

Coordinator and, where applicable, to the authorities. The WEA Coordinator supervises that contractors/consultants comply with Nynas safety regulations.

Note, Nynas assumes work environment but no employer's responsibility when external staffing is used and Nynas supervises the work.

Nynas procures work regarding for example design, project management, construction and land development. Contractor/consultant refers to individuals, employed by external companies, who need to have access, without being accompanied by a Nynas-employee, to the refinery area to perform the contracted work.

Examples of when the coordination responsibility within the refinery area applies:

- Project execution with external participation;
- Contract work (new developments, redevelopments, extensions, demolition etc) where the activity is not physically and clearly separated from other operations;
- Performance of service contracts (maintenance work on compressors, pumps, or heating, ventilation and sanitation facilities, etc);
- Other occasions when an external individual is expected to move around unaccompanied.

For further information, please see NMS 000909, Samordningsansvar enligt arbetsmiljölagen (Coordination responsibility according to the Work Environment Act).

4.2 Entry to and exit from the refinery area

4.2.1 Entry and exit through gates, turnstiles and doors

The area from the nedre grinden/lower gate (No 1) to the övre grinden (upper gate)/reception (No 2) and the canteen is open to the public during office hours (the hours when the nedre grinden, lower gate, is open).

Entry and exit through turnstiles and locked doors is only allowed

1. using personal access card
2. Regarding access card/visitors card see further 4.2.5

Note 1: Nedre grind/lower gate (No 1) is open workdays 06:30 to 16:30

Note 2: Vehicles without access card must contact reception/delivery office/operations on the phone by the gate

When entering and exiting through closed car gates No 1 to No 4, an access card must be used by the driver. The driver is obliged to

1. stop at the stop-sign
2. await a red light before
3. swiping the access card producing
4. a green light indicating approved passage

Entry and exit through car gates is only allowed

1. for drivers of vehicles with a driving permit. Each vehicle has an obligation to stop and the driver must use his/hers personal access card in the card reader. NOTE that passengers must exit the vehicle and enter through a turnstile
2. when gate opened by reception/delivery office/operations to load or unload goods
3. emergency vehicles on call

Entry and exit through car gates Övre grind/Upper gate (No 2), Bitumengrind/ Outer Bitumen gate (No 3) and Grönviksgrinden/Grönvik gate (No 4) is only allowed

1. For vehicles with a driving permit. Note that passengers are obliged to exit the vehicle and pass through the turnstile where one is installed.
2. When gate is opened by reception/delivery office/operations for loading or unloading of goods
3. Emergency vehicles in service (gates opened by refinery rescue services)
4. Pedestrians carrying bulky goods may contact Reception, swipe their access cards by the turnstile and enter through the car gate Övre grind/Upper gate (No 2) as it is opened by Reception.

Larger groups of visitors to cross Upper Grind (No. 2) by bus or pedestrian, may pass through the car gate together with their Nynas host (having a list with names of persons in the group).

Entry and exit through car gate Utterviksgrinden/Utterviks gate (No 5)

Transport of materials or personell through this gate may require that the gate is left open during a limited period of time. A guard from the contracted security company must be posted by the gate when it is left open.

Request for a guard must be sent to the HSE department in good time and at least one workday beforehand. Keys to Utterviksgrinden/Utterviks gate (No 5) are kept at CKR, the Refinery Rescue Services and the security company and can not to be handed out to external parties. The production group is not responsible for opening the gate for project work.

Bigger projects can purchase guard service directly from the security company contracted by Nynas and just keep the HSE department informed.

4.2.2 Age limits

A general age limit of 12 years of age applies within the refinery area (exception as above during office hours).

The age limit for the process and tank park areas is 18 years of age. Temporary exceptions can only be approved by the HSE department. In order to prevent unhealth of under age persons under 18 years, a minimum requirement of 18 years applies when working with hazardous or flammable chemicals in general. HSE department may approve exemptions. Regarding holiday work outside the process area the age limit of 16 year applies. Exemptions is not granted (note that there are specific rules on risk analysis and information to parents of holiday workers under 16 years).

4.2.3 Dogs and other pets

In the refinery area and premises, no dogs or other pets are allowed. The exception is the area from the lower gate to the reception during office hours.

Temporary exceptions for working dogs, for example watchdog and guide dog, can only be approved by the HSE department. The contracted security company is exempted from requirement to seek permission for working dogs.

4.2.4 Access cards and identity checks

Only authorised persons may enter the refinery area and an identity check is made when the access card is issued (exception as above during office hours). The access card must be carried at all times within the refinery area and shown on request. Movements on the refinery area are to be restricted to the area where work is carried out. Access to other parts of the refinery area is granted by the area responsible person. Authorisation is limited to agreed working hours.

All Nynas employees have one personal access card. Nynas employees must have valid certificates for the web based training programs as defined below to get an access card. A temporary access card may be issued by reception to employees who have temporarily misplaced their access cards. Access cards are normally issued with the lowest access level which includes the nedre grinden (lower gate), gate by the reception and by the canteen. Additional access must be approved by the line manager.

Consultants, contractors, etc are provided with temporary access cards by the reception. Access cards must be requested by a Nynas employee at least two workdays ahead of time. At large projects, name and Access/SSG-card number must be sent to the reception 1 month ahead. A large project (in this context) consists of more than 15 contractors/consultants. Consultants, contractors, etc are required to confirm their identity at reception by means of an id card or passport and have valid certificates for the web based training programs as defined below or equivalent (Arbets-säkerhetskortet, Työturvallisuuskortti, used in Finland and SCC, Safety Checklist and VCA (Veiligheid Gezondheit en Milieu Checklist Aannemers) for Contractors, have been approved as equivalent). Note that the Nynas specific training, Nynas lokala SSG Entre-utbildning, is mandatory for all. Temporary access cards are time limited and it is therefore important to state the estimated

duration for the work. The time limit is set to one week if no duration for the work is given. Temporary access cards are to be returned to reception after the work is finished.

Links to web based training:

- "Nynas lokala SSG Entre-utbildning (previouslySafeWork)", SSG ENTRE Grund and SSG ENTRE Kemi. See <http://www.ssg.se>.
- You will receive user name and password from SSG. Ensure that correct information regarding company, name and phone number is given.

	Applicable to	Not applicable to
Nynas local ENTRE To be taken annually	Everyone doing work within the refinery area, including those who do not need to do ENTRE and ENTRE Kemi, including external drivers (1, 3)	<ul style="list-style-type: none"> • Visitors to the canteen • People delivering or collecting goods at stores
ENTRE + Kemi To be taken every three years	<p>Nynas employees with personal access card.</p> <p>External personnel (2, 3) that:</p> <ul style="list-style-type: none"> - performs maintenance and project work - are involved in construction of process and maintenance equipment - performs checks and inspections of process equipment - performs work using vehicles and cranes in the process area - ISIT-consultants working with control systems or assignments longer than 6 month/year 	<ul style="list-style-type: none"> • People delivering or collecting goods • Canteen staff • People performing maintenance on office equipment • ISIT-consultants with assignments shorter than 6 month/year • Thesis workers and holiday workers (NOTE this does not include temporary or substitute workers) • Contractors performing maintenance, calibration and installation of instruments in buildings 145, 200, 202 and 203. Contractor is to be escorted to the work place.
	<p>1) Those who load and unload without guide, such as NSP- or bitumen products, recurring transports</p> <p>2) Employee, line manager and top management in company</p> <p>3) Exceptions can be approved by Work permit approver after consultation with HSE for infrequent work if additional precautions are taken. This must be stated in the work permit. Except for occasional work without a work permit, such as site visits required for benchmarking / audit / planning of work, can be given by the HSE department (e-mail).</p>	

Access to harbour area requires permission from Acting PFSO, PFSO or HSE department.

4.2.5 Visitors

All visitors must be reported in advance to reception. Only the following types of visitors are allowed (contractors/consultants performing work and having an agreement with Nynas are never counted as visitors, neither are Nynas-staff on duty).

1. Job applicants
2. Educational visits
3. Family members
4. Company representatives involved in business activities with Nynas (not actually performing contracted work on refinery area)
5. Representatives from authorities, auditors, insurance company or broker

All visits to contractors/consultants must be approved by the Nynas contact person (always a Nynas employee) in good time and be related to the work contracted by Nynas. The Nynas contact person must inform reception of the visit.

Visitors must have a separate visitor's badge that is to be signed out in person by reception.

Reporting and Nynas host

All visitors must report to the reception.

The visitor will be collected by a Nynas host who will accompany the visitor during the entire visit. The Nynas host is responsible for providing the visitor with the appropriate information about the rules on safety, health and environment, for ensuring that the rules are complied with and that the visitor is provided with the necessary personal protective equipment (PPE).

All meetings where a visitor is present must start with relevant safety information focusing on what to do in case of a fire or other emergency such as a gas leak or evacuation.

At the end of the visit, the host shall accompany the visitor back to the reception for visits finishing before 16.30 and outside the refinery area (outside the lower gate) for visits finishing after 16.30.

In general, only a Nynas employee can be a Nynas host. Exceptions can be made for contractors/consultants if the Nynas contact person ensures that the contractor/consultant is competent to provide adequate safety information and PPE and agrees to carry out the task. The reception should be informed of the name of this person.

Please note that visitors may only be accompanied within the host's own authorised geographical area. Prior to accompanying visitors to other areas, permission must be obtained from the relevant area manager. Visits inside the process area require permission from the Shift Supervisor. Visits to the harbour area require permission from Acting PFSO, PFSO or the HSE-department.

Educational visits

Educational visits only includes visitors representing parties that

- Nynas has an established or possible future business relationship to
 - students registered at institutes of technology
 - students within the town of Nynashamn, grade 7 or higher
- Nynas has a strategic interest in supporting
 - representatives from parties promoting good will for Nynas
- reinforces Nynas' values
 - visits that clearly relate to Nynas being a good citizen

At visits of larger groups a bustour may be performed. Note particularly limitations regarding gas fuelled vehicles, in section 4.3.4.

Visits by relatives to employees

It is possible for Nynas employees to bring relatives as visitors but these visits must be approved by the line manager of the employee.

Visits by authorities (omitted in English version)

4.2.6 Access to process and tank park areas

Generally, the process and tank park areas may only be accessed by employees who work in these operations.

Hence, it is prohibited for anyone other than authorised operations personnel to enter the process and tank park area.

Exceptions can be made for any individuals who need to visit these areas in order to carry out their work. Prior to the visit, the following must take place:

- The Shift Supervisor must be contacted for an "all clear", this applies to both process and tank areas.

- Access cards must be swiped in any of the card readers installed at the perimeter of the process area (see “reg.tavla” = registration board, in the refinery map appendix). This only applies to the process area.
- When exiting the process area, the visitor must swipe his/her access card in any of the card readers at the perimeter of the process area.
- See section 4.3.4

4.3 Traffic regulations

4.3.1 General

National Road Traffic Regulations applies within the refinery area. It is forbidden to use in-lines, kick-boards, skateboards or roller skates within the refinery area. Traffic signs / markings, etc. must never be altered or disturbed. Those who for some reason displace a traffic sign shall immediately restore it, and if it not possible enlighten Nynas about it and immediately take any measures traffic may require. In case of any accident in the refinery area, responsibility according to National Road Traffic Regulations are valid; to inform Nynas of possible damage, obligation to leave information about the incident and remain at the scene of the accident and if necessary help damaged or harmed etc. Nynas strongly recommends to avoid talking in mobile phone at driving.

4.3.2 Speed

A speed limit of maximum 30 km/h applies from the lower gate and to the gate by the reception. 20 km/h applies inside the gate by the reception. Temporary changes in speed limits may apply within the refinery area and must always be clearly posted. Within the inner process area the speed limit 10 km/h applies.

4.3.3 Parking

The placing of vehicles or machines when performing work are regulated by working permits. Other times, the placing and parking of all vehicles and machines must comply with the following.

Motor vehicles may generally only be driven and parked in the area between the lower gate and the visitors' parking lot. Parking, in this area, is only permitted on designated parking lots. Contractors/consultants in need of parking the car/company vehicle at lower parking lot during work-week/weekend outside working hours when lower gate is closed, can apply for a “Parking permit for contractors”. The Parking permit is available in the reception and digitally in database *forms*. This kind of parking outside working time must be done at particular marked places. Keep the parking permit clearly visible in the front window. The visitors' parking lot may only be used by temporary visitors to Nynas. Contractors/consultants who have an assignment with Nynas are not temporary visitors in the matter. Engine heater sockets may only be used by Nynas's own personnel and for connection outlets for engine heaters on cars. This means, for example, that no connection to the charging of electric vehicles is allowed.

Specifically for the area inside the gate by the reception:

- Long-term parking only in designated areas as approved by Asset Manager Real Estate and HSE-department
- It is forbidden to park:
 - Closer than 10 metres from a fire hydrant or a foam injection point.
 - Closer than 3 metres from pipe track.
 - In a manner that obstructs access for emergency vehicles or escape routes.
 - Within areas with an increased risk of fire/explosion, so-called classified areas.

Nynas employees with work place in Blå Huset and the Bitumen area may drive in through the Bitumen gate and park in the parking lot south of Blå Huset (Blue Building).

Parking area between VD2-road and EA is solely for short visits to Central Control Room (CKR).

Nynas shall not be liable for damage to any vehicles driven or parked within the refinery area. The company can only be liable for damages arising out of negligence or misconduct attributable to its own employees.

4.3.4 Driving permit within the area

The HSE department handles applications for driving permits valid for more than one day. An application for a driving permit for an employee is to be submitted by the responsible line manager and for a consultant/contractor by the responsible contact person. Work permit responsible person ("Utförandeansvarig") with valid reason in need of a driving permit may also apply for a driving permit. The application should clearly state the reason why the permit is required. Use the database Traffic certificates (Trafikillstånd) for the application. Gas fueled vehicles are forbidden inside Upper gate and inner Bitumen gate, due to risks in case of an event.

Permits may be issued for one day for motor vehicle traffic within the area inside of the gates next to the reception for special reasons, e.g.:

- Employees/contractors/consultants in the course of carrying out work;
- Work machines in the course of carrying out work.

Note that a one day permit requires that the visitor/vehicle is accompanied by a guide the whole time. The following information must be mailed to reception

- Date
- Type of vehicle
- Type of fuel
- Contact at Nynas
- Name of and contact information for the guide

Approved driving permits are issued by and can be collected at reception.

Every driving permit holder within the area shall keep the driving permit card clearly visible in the front windshield of the car. The permit is valid for one vehicle only and is not to be used in another vehicle.

The following vehicles do not require a driving permit:

- Emergency vehicles;
- Contracted security company
- Recurring material deliveries to main storehouses;
- Tankers loading NSP or Bitumen products.
- Transport vehicles for sulphur or recurring deliveries of process chemicals
- Transport vehicles to UL4 and UL5

4.3.4.1 Driving within the process and tank farm area

Every form of motor vehicle traffic within the process and tank farm area may only take place after having obtained a written, time-limited permission for each occasion from the Work permit approver/Shift Supervisor. Certain cars belonging to Production group and other cars decided by Production Manager are exempted from this rule (record of these cars available in Permit office).

A risk analysis must be performed when vehicles are to be driven in the process area and when driving outside constructed roads in the tank farm area. Risk reducing measures are either a guide or temporary protection of equipment/pipes. The purpose is to prevent hitting process equipment. Exempted from this requirement are mopeds, ATVs, cars and pickup trucks with good visibility and, at the discretion of the Work permit approver/SC, regular unloading and loading and transport of waste.

All drivers of industrial trucks inside the refinery shall in addition to a tractor licence or driver's license also have a truck license (education certificate) and a Truck Driving Permit, issued by Nynas' responsible supervisor. The truck Driving Permit is personal and shall be shown on request. A copy of the Truck Driving Permit should be sent to HSE department.

Form for Truck Driving Permit (pdf) can be found in Nyport/Tools & Services/Applications/Personal routines/Forms.

Driving Permits and Truck Driving Permits for contractors are time limited to the duration of the actual contracted work and will be provided by Nynas appointed responsible for the work.

4.3.4.1.1 Amendment for driving in the inner process area

The inner process area has a physical marker for the vehicle barrier (chain). Driving in the inner processing area must be specified in the written permit given by Work permit approver/SC including route and direction. A gas test is required.

4.3.5 Fork lift trucks

Drivers of fork lift trucks must have a valid driver's license, a valid certificate and a permit issued by Nynas. Contractors driving fork lift trucks must also have a permit issued by their employer.

4.3.6 Driving certificates

Drivers of contractor's machines (e.g. cranes, wheel loaders etc) shall hold and be able to show a valid driving certificate. Contractors must also have a permit issued by their employer.

4.3.7 Deregistered or unregistered vehicles

Deregistered vehicles must not be used or parked within the refinery area. The same applies for vehicles banned from being driven.

Vehicles and motor driven equipment that are not subject to the mandatory traffic safety inspection must be checked and maintained to ensure that they remain in perfect condition regarding road safety. This is the responsibility of the user. The checks shall be documented and shown to the HSE manager before the vehicle is used within the refinery area.

4.4 General rules of conduct

4.4.1 Housekeeping and General care

Time limited storage of materials (equipment, packing materials, wood, etc), scaffolding or machinery is only allowed in accordance with permit from Shift supervisor or line manager. Materials shall be removed as soon as possible. Time limited storage of materials shall generally not be placed:

- Closer than 10 metres from a fire hydrant or foam injection point;
- Closer than 3 metres from pipe racks;
- Blocking access routes for emergency vehicles;
- In an area with a higher likelihood of fire/explosion, classified or hazardous area;
- Obstructing safety equipment, including detectors and sensors.

All combustible materials must be removed prior to shut-down or start-up of process plants unless exceptions have been approved by the Shift Supervisor.

Regardless of whether a work place is situated far from or close to a facility, tank, pump house, loading area or pipe rack, there is no complete guarantee against disturbances. As a general rule, in the event that there is a smell of gas or any other indication of gas or liquid leakage, any welding, grinding, chopping, cutting, etc must be stopped immediately. The electricity must be cut to all work machinery. The engines of vehicles, cranes, etc must be stopped.

The Shift Supervisor or the HSE department must be notified immediately.

In the event of unsuspectingly coming across a cable or pipeline in connection with excavation work, the work must be discontinued immediately, and both the power department and the asset manager must be summoned.

4.4.2 Smoking

Smoking is prohibited in the entire refinery area unless otherwise specified. The same rules apply to the use of e-cigarettes. Lighters/matches may not be used or brought into the process and tank park area. Nynas provides matches in the smoke rooms/smoke boxes located in the area.

4.4.3 Photography

Photography is prohibited within the entire refinery area for persons not employed by Nynas. Nynas employees and Nynas consultants can take photographs exclusively for internal use except in CKR. Nynas consultants need a written approval, stating the name of the photographer and the period of validity, from a Nynas employee (mail is adequate) which they must carry with them. Approval from relevant line manager must be obtained before photography indoors. Note that photography in the process and tank farm area with a camera which is not ib IIC T4 requires a permit to work, see NMS 002001, Arbetstillstånd (Work permit). A basic condition for any permission is that the photographer is well aware of any areas that are fire hazardous or where there is a danger of explosion and that no originals or copies can leave Nynas area or servers.

Permission to take photographs in CKR can only be given by the refinery manager or the HSE-department. Staff from the HSE-department must be present when taking photographs in CKR. Photos taken in CKR must be approved by the HSE-department before use. No close ups showing screens are allowed.

Photos that are to be used externally must be approved by the refinery manager or the HSE-department.

4.4.4 Radios, telephones, tape recorders etc.

Portable equipment, such as radios, tape recorders, telephones, communication radios, pagers and computers are in their regular forms not explosion protected. Consequently, these may not be brought into areas that are fire hazardous or where there is a risk of explosion, e.g. in the process area, pump houses, tank areas, quay decks. Mobile phones without cameras approved to ib IIC T4 are allowed in the process and tank farm area.

From a disturbance point of view, it is prohibited to use communication radios in the IR (Interface) rooms when the process plants are in operation.

4.4.5 Alcohol and drugs

Bringing alcohol or drugs or consumption of alcohol or use of other drugs is strictly prohibited within the Nynas refinery area. A person believed to be under the influence will be taken into custody and expelled from the refinery area.

Read more in NMS 004752, including the Swedish action plan.

4.4.6 Theft

Theft is never acceptable – regardless of the value of the stolen object. Theft is a criminal offence and will be prosecuted.

Any suspicion of theft must immediately be reported to the HSE department. The HSE department will then, if Nynas property has been stolen carry out an internal inquiry and, if necessary, report to the police. Theft of private property or the property of other businesses is to be reported to the police by the owner.

If an inquiry has established that an employee has been guilty of theft at the workplace, his/her continued employment will be subject to review. If a corresponding situation occurs in relation to a contractor/consultant, then the individual will be immediately expelled from the refinery area and the employer will be notified. See NMS 001694.

4.4.7 Waste management / cleaning

Work areas shall be kept clean. Waste shall be continuously removed. The work place shall be kept in good order and must be cleaned on a daily basis.

Where appropriate, packaging and other waste must be removed at the expense of the contractor to a hazardous waste collection point or other designated place. Good order must be maintained in and around any barracks and depots that are at the disposition of the contractor.

The work will not be considered complete by Nynas until the area has been cleaned and approved. See NMS 001187.

4.4.8 Contractors' access to Nynas workshops or storage facilities

Contractors are not entitled to use Nynas' workshops or storage facilities. Exceptions can be made if permission is granted by the MTS Manager NHN.

4.4.9 Staff rooms for contractors, cabins and storage rooms (temporary buildings)

The placement of staff rooms/cabins, materials and prefab-sites is the responsibility of the Real Estate Engineer and requires an approved work permit. A risk assessment, taking all risk sources into account, must be made and documented before the placement of staff rooms/cabins. The risk assessment shall be reviewed by the HSE department.

In connection with long-term construction assignments, contractors will normally have their own staff huts. In connection with short-term construction assignments, Nynas may, subject to available space, offer changing and shower facilities.

Generally, wooden buildings may not be erected within the area. Wooden pole erection may, however, be approved if other materials are non-combustible. In exceptional cases, metal clad wooden cabins may be used, subject to the HSE department's permission.

Temporary buildings must not block access routes for emergency vehicles. Buildings must not block fire hydrants, foam injection points, other equipment or in any way obstruct emergency procedures.

Temporary buildings placed in the immediate vicinity of a process plant, subject to the risk assessment performed, must not be used when the process plant is in operation.

4.5 Personal protective equipment

4.5.1 General



All-covering clothing, high visibility clothing (vest is adequate), hard hat with chin strap, eye protection with side protection and protective shoes must be worn at all times in marked areas within the refinery area. The area from the lower gate to reception, offices, workshops and the area outside the Blue Building, including the parking lot, are exempted. Inside the Upper gate and the Outer Bitumen Gate, signposts mark the boundary where personal protective equipment is required.

In areas posted personal protective equipment, the following exceptions applies: Helmet and safety goggles might be taken off if you are in a vehicle cab. Helmet and safety goggles should, however, be easily accessible next to the person in case one need to quickly evacuate the area or otherwise quickly get out of the vehicle cab.

Note that the exemption for workshops does not apply when work is performed regarding all-covering clothing, eye protection and protective shoes..

Nynas provides appropriate protective equipment for its employees. The contractor shall provide its own appropriate protective equipment for the contract workers. Protective equipment must satisfy the requirements set up by the Swedish Work Environment Authority's regulations. In case of uncertainty as to the correct choice of equipment, the HSE department should be consulted.

Regarding escape masks, eye protection, hearing protection, breathing protection, protective footwear, etc, see NMS 002535, Personlig Skyddsutrustning (Personal protective equipment). Visitors to ship and shipping agencies are accepted from PPE, within defined walking areas (see also 4.2.5).

4.5.2 Hard hats

Hard hats shall be worn in compliance with 4.5.1 and are mandatory in all repair, construction and facility work, also outside of the regular “mandatory hard hat areas”.

For work where hard hats can not be used, such as welding, a risk assessment is required to establish any need for other protective measures.

4.5.3 Escape mask (hydrogen sulphide, sulphur dioxide, hydrocarbons)

Within the process area, it is mandatory to bring an escape mask when the plants are in operation. See appended map. The escape masks are provided by Nynas but they are Nynas property and must be returned to Nynas (two types available).



*Red Escape mask Dräger 15 min
(3 pictures),
Green Escape mask mini Scape 5
min (4 pictures)*



4.5.4 Eye protection

Eye protection with side protection is to be used in compliance with 4.5.1 and shall also always be worn at all kinds of construction and maintenance work outside the process and tank park area.

When handling chemicals and when carrying out work that involves flying particles, e.g. cutting, drilling, high-pressure spraying, tightly sealing protective goggles must be used.

In other areas where splashes and splinters are considered a danger, e.g. in workshops and laboratories, eye protection suitable to the purpose must be used.

4.5.5 Life jackets

Life jackets are required on quay decks and connecting areas such as dolphins, walkways and mooring points. Life jacket is also required when working by the shore or off boats, barges, etc.

Life jackets worn while working (except for inspections) must be approved according to SS-EN 396-150N. Life jackets worn during inspections must be approved according to SS-EN 396-100N.

This does not apply to ship crews or visitors to ships.

4.6 Work permits

4.6.1 General

A work permit is required for all work except for the daily activities that take place in each respective line organisation. This means that a special work permit must be applied for in order to carry out new development, redevelopment, repair work and demolition work within the entire refinery area.

For information about permit to work regulations, see NMS 002001, Arbetstillstånd (Work permits).

4.6.2 Fire guard in connection with hot works

The work permit issuer decides if a fire guard is required. The appointed fire guard must meticulously take part of the terms of the work permit and the general rules that apply to fire guards. When the work requiring a fire guard is carried out by a contractor, it is the responsibility of the contractor to supply the fire guard. See NMS 002001 for checklist.

4.6.3 Work in confined areas and pits

This includes tanks (not "förrådscistern" or clean tanks with drive through access), containers, furnaces, wells and pits deeper than 1.2 metres. For further definition see NMS 002001.

Confined areas may give rise to a risk of lack of oxygen and hence a risk of asphyxiation. Before entry, the oxygen level shall be checked, and it has to be ensured that no poisonous gases are present. These checks are carried out by a person certified to perform sampling of gas. The oxygen level shall then be continuously monitored.

For this reason, never enter a confined area without following the existing safety routines. An entry permit shall always be obtained for access, and there must be someone outside (a hatch guard) who knows where you are - someone who has undergone the proper training, has good information and knowledge about the work being carried out inside the confined area, and can get help if necessary. Any exceptions from the hatch guard requirement must be expressly stated in each entry permit.

Before entry into a confined area, connected to a process system, the confined area must be blinded off, see NMS 002497.

4.6.4 Working with explosives (blasting)

Special rules apply to working with explosives. See NMS 001872, Sprängningsarbeten inom Nynas raffinaderi i Nynäshamn (Blasting within Nynas refinery in Nynäshamn).

4.6.5 Overtime work for contractors

If overtime becomes necessary on weekdays between 16.00 and 07.00 hours and during weekends, this should be stated in the relevant work permit.

4.7 Special risks and rules

4.7.1 Safety instructions nitrogen

In the process area, nitrogen (N₂) is used as a protective gas in process vessels in order to prevent explosive mixes of air and hydrocarbon and to prevent self-ignition.

An increase in nitrogen levels always occurs at the expense of the oxygen level, which will decrease and may lead to a risk of asphyxiation. Nitrogen cannot be seen, felt or smelled, so a low oxygen level cannot be sensed by smell or registered by sight or touch. High levels of nitrogen cause no dizziness or nausea before causing loss of consciousness. Note that the escape mask does not provide any protection against nitrogen. Nitrogen can accumulate in depressions.

All tubes containing nitrogen have a unique connection that only fits with the nitrogen outlets. Outlets are also locked and the production team have keys to the locks. The production group are the only ones permitted to lock/unlock the nitrogen outlets. Thereafter the production group and those with valid work permits covering this have the right to use nitrogen gas outlets. The tubes may only be used for nitrogen. The service outlets are signposted with warning texts, Nitrogen and N₂. Pay attention to the warning signs.

The manufacture and/or use of a crossover between a nitrogen-connection and an atlas-connection are strictly prohibited according to these safety regulations.

4.7.2 Safety instruction hydrogen sulphide

Hydrogen sulphide is handled within the process area. It is one of the most dangerous gases that personnel within the refinery can be exposed to and it is lethal at low concentration.

Hydrogen sulphide is a colourless, very poisonous gas, and has a characteristic smell of rotten eggs that can be recognised at a level of less than 1 ppm. If the concentration rises to approximately 100 ppm, the sense of smell is deadened. It is therefore not possible to rely on the sense of smell in order to discover hydrogen sulphide. The gas is heavier than air and may therefore exist in wells, ditches and pits.

If you can feel the smell of hydrogen sulphide, leave the work place and warn your colleagues, do not go back there. Contact the central control room for further action. If you sense a strongly irritating smell of hydrogen sulphide, you should also put on an escape mask.

The safety instruction for hydrogen sulphide contains information about the risks associated with hydrogen sulphide and the special rules that apply in the event of hydrogen sulphide leakage. See NMS 002696, Säkerhetsinstruktion svavelväte, drift (Safety instruction for hydrogen sulphide, operation).

At some process upsets, hydrogen sulphide is rerouted to the flare and sulphur dioxide is formed. The area down-wind is then evacuated and the evacuation alarm may be used.

4.7.3 Safety instruction oxygen

Oxygen is a colourless, odourless, tasteless and oxidising gas and special safety routines are given in NMS 002472 covering

- Risk assessment;
- Personal Protective Equipment;
- Handling of tools;
- Handling of spares;
- Use of gaskets and lubricants.

4.7.4 Work with chemicals

Before a chemical may be used within the refinery area, it must be approved by the chemical review group. It is of importance to plan for this process well in advance. See NMS 004881. Other procedures are present regarding process and product development and requires separate contact.

The principle of product choice shall be applied, which means that you should primarily choose chemicals with little environmental impact.

Also, please note the requirements for labelling and handling chemicals and waste management set out in applicable laws and regulations.

Any handling and storage of chemical products shall take place within a separated area or in a confined storage room as directed by the contact person. Vessels and containers shall always be labelled with contents and any applicable warning symbols.

If chemicals are flammable or explosive, it is particularly important that they are stored in the designated place. This information must be provided to the Rescue Services in case of fire.

4.7.4.1 Microorganisms and infection

When working in the biostep (MBBR) in the water treatment plant, at direct contact with sludge, a requirement of vaccination applies. Work performed in parts before the biostep does not have a vaccination requirement. Further information in NMS 004001.

4.7.5 Work at height

Work at height, above 1.25 metres, must not take place without the appropriate protection against falls.

If work entailing a risk of falling to a lower level where the difference in height is two metres or more there must be a work environment plan established. See NMS 003286.

4.7.6 Scaffolding

All scaffolding must satisfy the requirements set up by the regulations of the Work Environment Authority and the manufacturer's instructions.

Assembly, disassembly and change of scaffolding may only be carried out by certified scaffolding fitters, see NMS 001832 and 4.4.1.

4.7.7 Use of lifting crane

4.7.7.1 Lifting of persons

At temporary lifts with crane or truck the employer, Nynas or contractor, shall appoint a specific individual (lifting of persons manager) to manage the work, risk assess and ensure compliance with the regulations of the Swedish Work Environment Authority.

Within the refinery, the rule is that irrespective of who makes a temporary lift of a person by crane or truck, Mr Mats Ljungberg (tel 5123) or his deputy Mr Conny Pettersson (tel 5361) shall be contacted for a check that the crane/truck and the work basket together are approved for personal lifting.

Personal protective equipment (protection against falls) must be used for temporary lifting of persons (truck/crane). Personal fall protection must also be used at working from skylift/scissor lift.

4.7.7.2 Other lifts

Any contractor or Nynas employee performing a lift with a crane shall appoint a specific individual (lifting manager) to plan and manage the work and ensure compliance with the regulations of the Swedish Work Environment Authority. Work permits applicants ensure that relevant parts of the lifting plan are included in the work permit application. The lifting manager must ensure that a sufficient area are is cordoned off or otherwise secured (existing gratings/work platforms and equipment is not a secured area) to avoid harm to people or equipment.

It is the responsibility of the contractor to supply a signaller when a lift with freely suspended load is performed and the operator of the lifting device is not in command of an adequate view of the entire lifting zone.

4.7.8 Gas tubes

Gas tubes shall be stored in a place designated by the work permit issuer. Gas tubes should never be stored above ground level.

4.7.9 Work machines

Work machines shall be shut down during breaks and otherwise at all times before leaving the work place. Work machines may only be left overnight in the process-/tank farm area if this is stated in the work permit. Keys to work machines must be left in the work machine or handed over to SC when the operator leaves the work machine.

4.7.10 Cordoning off

Works may require opening up process equipment, the excavation of holes in the ground, or the removal of parts of equipment or even safety equipment. When this occurs, the person performing the work has a duty to cordon off the area immediately.

Plastic tape may only be used for short term, emergency cordons for up to one working day. If the need to cordon off an area remains after the emergency, the plastic tape must be replaced with equipment that is visible independent of ambient light and durable under all weather conditions.

If equipment is removed from heights, thereby creating an unsafe situation, the access (the stairs or ladder) to this work place shall be marked with a warning text and cordoned off.

If a cordon is removed during work, the area must be carefully monitored. This shall also apply during shorter breaks.



Cordons shall be maintained during the time when the reason for blocking remains by the procurer and shall immediately be removed when the need for blocking is cleared.

Cordons that are in place for more than one working day must be labelled with the reason for the cordon and the procurers' name and telephone number.

Cordons shall always be respected.

4.7.11 Electrical equipment

Supervisors or managers (applies to Nynas as well as to contractors) have the responsibility to ensure that all electrical equipment used within the refinery complies with applicable regulations.

Work machines, welding machines, lighting fixtures, etc. may only be connected to the central power outlets as designated by the power department.

Within any areas of the refinery where there is an increased risk of fire/explosion, so-called classified or hazardous areas, only explosion proof equipment is allowed. Classified or hazardous areas in the refinery are process and tank park areas but also to less extent in other areas. The Shift Supervisor may permit the use of non-explosion proof equipment in a work permit.

4.7.12 Check after work completion

The work management in charge of any completed work is responsible for ensuring that the work place is inspected after the work has finished. It is of particular importance to check that there are no fire hazards, that the power has been cut, that the vents on any gas tubes have been turned off, and that all gas tubes are located in their designated places.

4.8 Fires, accidents and alarm

To ensure verification of evacuation, information is required regarding people present in the affected area. Therefore, it is imperative to always register entry and exit in the access card readers.

Foremen and supervisors for contractors performing work in the process area must give their contact information on the whiteboard in CKR when work is started, keep an updated evacuation list or equivalent (see Appendix 4.8 Evacuation List work permits) of his/hers personnel and be able to report any missing personnel and their expected location to Nynas, should an evacuation of the process area occur.

4.8.1 Raising the alarm (fire, accident, sudden illness or other emergency)

The Refinery rescue Services is notified on telephone number 08 520 652 22, the internal extension number is 5222. This number goes to RCSL (Rescue Central in Stockholm County). They will take action (if further resources are needed) according to special instructions.

Local firefighting officer on duty must be informed without delay in case of a small fire already extinguished by the operating staff or other present staff.

If required, an ambulance will be called by RCSL, call 08-520 652 22, internally 5222. Nynas personnel shall meet the ambulance at the entrance to the refinery and guide it to the place of the accident. The refinery rescue Services can provide life-sustaining assistance and guide ambulance therefor no other emergency numbers must be used because it may delay the rescue.

Any accidents that have occurred must be reported in the deviation database. Accidents involving personal injury, risk of serious personal injury, fire, smouldering or environmental impact must be reported as soon as possible to the HSE department.

4.8.2 How to act in an emergency

Anyone discovering an emergency situation shall:

- Make an emergency call
- Help people in need
- Attempt to remove the source of danger
- Get help

When making an emergency call

- State who you are
- State where you are calling from
- Describe the emergency situation
- Speak in a calm and clear voice
- Make sure that your message has been received. Demand confirmation!

4.8.3 Alarms and signals in the process area

Local visual and audible alarms in the process area are tested every day at [01:00 pm \(up until 2018-06-14 at 09:00 am\)](#). Evacuation alarms for the process area are tested every day at [01:00 pm \(up until 2018-06-14 at 09:00 am\)](#). Great alarm to the Refinery's Rescue Team is tested Thursdays at 6 pm (18:00).

4.8.3.1 Local evacuation alarm in process plants



There are local visual, red and white flashing lights, evacuation alarms in the process plants, and in WWT and O12527.

If the local evacuation alarm is activated in the process plant where you are, you must immediately

- Stop your work and shut off vehicles and electrical equipment before leaving the area.
- leave the work place and go to CKR

4.8.3.2 Evacuation alarm for the process area



The evacuation alarm is an audible alarm followed by a voice message, in the form of a 10 s signal followed by "Utrym området" ("evacuate the area"). Also, all the local visual alarms in process facilities is activated.

When this alarm is activated, you must immediately

- Stop your work and shut off vehicles, leaving the ignition key in place, and electrical equipment before leaving the area.
- Leave the process area by foot, using the quickest way out of the area. Take the direction of wind into consideration when leaving the area and be alert for any indication of gas. Use any of the access card readers for the process area to register your exit, if it is safe to do so, and go to the assembly point at CKR (parking lot outside the Grey Barracks). **Do not use the card reader just outside CKR** to register exit at evacuation alarm, instead use the card reader at assembly point Grey Barracks. Follow the instructions posted at the assembly point. Staff employed in refinery rescue services (Raffinaderiets Räddningstjänst) must inform

CKR when they leave CKR or the process area to join the emergency response.

- Use the escape mask if you experience any irritation to respiratory passages or strong odours.

4.8.3.3 Other signal systems

There are light signals by some roads leading into the process area. Passing in the direction of the process area is not allowed when red lights are shown.

4.8.3.4 Special regulations for PG at evacuation alarms

Specific rules are given in the Swedish version.

4.8.4 Fire alarms in buildings

In office buildings, laboratories and certain other buildings, smoke, gas and high temperature detectors are installed. In case of fire or smoke development, the detectors will be triggered and emit a local alarm of fire bells and send an alarm to the Refinery rescue Services.

Leave the building and go to the assembly point indicated on the evacuation plan in your location.



4.8.5 Other alarms in buildings

Gas Alarm - In and outside the pilot hall (building 145, room 11) gas alarms with flash light for hydrogen (blue) and hydrogen sulfide; H₂S (orange). Evacuate the premises if any of these alarm goes off. Notify staff of Process Technology and obtain approval from the person in charge (Team Leader Pilot plants or Manager Process Technology) before entering the room again.

Alarms of low oxygen level - Alarm at low oxygen level, 19%, in room 218 at the laboratory (building 202). This sound and light alarm has two sirens (low / high), and white and red flashing lights. When the alarm is activated leave the room.

4.9 Environment

4.9.1 How am I affected by Nynas' environmental work

Nynas is working purposefully and systematically towards reducing the environmental impact of our operations.

Nynas' environmental work concerns you as all the rules apply to both employees and contractors. Among other things, the rules govern the way chemicals, spillage and waste are handled and the way environmental incidents are reported.

Remember that breaches against environmental legislation may lead to prosecution both for businesses and individuals.

4.9.2 What do I do if I spill oil or chemicals?

When an oil or chemical spill has occurred, the following actions shall be taken:

- Immediately stop any further spreading;
- Emergency clean-up shall commence as soon as possible (suction, sealing off etc);
- A deviation report must always be filed if

- the leakage is greater than 10 litres to ground;
- for all spills to water;
- for all releases of smoke or soot lasting longer than 3 minutes;
- for all releases of hydrogen sulphide exceeding 100 kg;
- A complete clean-up must have taken place within 4 days.

If the oil spillage poses an emergency environmental threat or risk of fire, the refinery rescue services must be notified immediately. The HSE-department must also be informed and a deviation report registered the same day as the event.

4.9.3 How do I sort my waste?

All waste must be handled in an environmentally responsible way. You must sort your waste in labelled containers and vessels in accordance with the directions provided at the waste collection point.

The waste shall be sorted as follows:

- Uncoloured glass shall be disposed of in the bottle banks marked “uncoloured glass”;
- Coloured glass shall be disposed of in the bottle banks marked “coloured glass”;
- Paper for recycling shall be disposed of in the bins marked “paper for recycling” or in the rubbish bin;
- Combustible materials shall be disposed of in the bins marked “combustible materials” – food waste, plants, binders, books, soft plastic material, single use material and other combustible material shall be disposed of here.
- Non-combustibles shall be disposed of in the bins marked “non-combustibles” – metal packages, aluminium foil, rubber, leather, porcelain, gloves, work clothes are disposed of here.
- Power and electrical waste shall be disposed of in the special skips marked “electrical waste”.
- Hazardous waste shall be disposed of in the special skips marked “hazardous waste” – this is where paint residue, oil residue, solvents, chemicals should be disposed of.
- Hazardous waste that is subject to special regulation – such as asbestos and mercury: the handling and labelling of these substances must be in compliance with the statutory requirements.

Not all waste collection points have the complete range of containers for the various types of waste. Our Real Estate Engineer or his deputy can be consulted if there are any issues concerning waste. Prior to the depositing of any waste or creating landfills within the refinery area, our Real Estate Engineer or his deputy must be contacted for approval.