



DUTCH
SAFETY BOARD

Summary

Odfjell Terminals

Rotterdam Safety

during the 2000 - 2012 period



Odfjell Terminals Rotterdam Safety

during the 2000 - 2012 period

The Hague, June 2013 (project number 20120731)

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Dutch Safety Board

The aim in the Netherlands is to limit the risk of accidents and incidents as much as possible. If accidents or near accidents nevertheless occur, a thorough investigation into the causes, irrespective of who are to blame, may help to prevent similar problems from occurring in the future. It is important to ensure that the investigation is carried out independently from the parties involved. This is why the Dutch Safety Board itself selects the issues it wishes to investigate, mindful of citizens' position of independence with respect to authorities and businesses. In some cases the Dutch Safety Board is required by law to conduct an investigation.

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The full report is published in Dutch. The English summary is the translation of the consideration and the conclusions of the report. In the event of any discrepancy between these versions, the Dutch text shall prevail.

Reason for the investigation

March 2012. A variety of shortcomings were discovered during an unannounced inspection of the Odfjell Terminals Rotterdam (Odfjell Rotterdam) site in Botlek. The inspectors established that there was a major maintenance backlog to the storage tank floating roofs and pressure valves. Odfjell Rotterdam could not prove that the tanks were in order. The inspectors also determined that inappropriate electronic equipment was being used in an explosion hazard area and that the tank cooling and fire-extinguishing systems of the tanks had not been tested for many years. The inspectors had already determined some of these shortcomings years earlier and the company had not taken effective measures to address them. A few issues such as tank maintenance management were investigated in depth for the first time by the inspectors.

The three supervisory authorities, that is, the Environmental Protection Agency Rijnmond (DCMR), the Social Affairs and Employment Inspectorate (SZW Inspectorate) and the Rotterdam-Rijnmond Safety Region (VRR), act against the company. Various penalties were, for example, imposed and threats regarding a total shutdown were issued. The attitude of the supervisory authorities was partially due to a serious incident in the summer of 2011 when approximately 219 tons of highly flammable butane was released to the outside air during the course of two weeks. Fire would have ensued in case of ignition. A chain reaction was probable, transferring the fire to other tanks on site. Odfjell Rotterdam did not report the incident to the DCMR but a whistleblower leaked the incident and made it public. During this same period, the DCMR also found out that high concentrations of benzene had been released at Odfjell Rotterdam. In July, it was also determined that the cooling and fire-extinguishing facilities of the storage tanks were not functioning properly. The supervisory authorities increased the pressure on the company to such a high level that Odfjell Rotterdam finally decided to shut down operations itself on 27 July 2012.

The Odfjell issue led to public unease and major political and media attention. After the earlier issues at high-risk companies such as Chemie-Pack, Huntsman and Thermphos in the Netherlands, the situation at Odfjell Rotterdam once again damaged the trust of citizens with regard to this sector in general.

Investigation by the Dutch Safety Board

The shutdown, the serious incidents that preceded it and the social unrest regarding these are the basis for the Dutch Safety Board to initiate an investigation regarding safety at Odfjell Rotterdam. The investigation focuses both on safety risk management at Odfjell Rotterdam and the context in which this occurred.

The focus is mainly on the government institutions that play a part in the issue of permits, supervision and enforcement, but also on Odfjell Rotterdam's customers and the certifier. The objective of the investigation is to obtain insight into the conditions that led to the long-term persistence of the safety shortcomings, to learn from this information and draw up recommendations to assure the safety of high-risk companies. The investigation period ranges from 2000, when Odfjell bought the terminal, to the shutdown in 2012.

Findings of the investigation

Odfjell Rotterdam

Odfjell Rotterdam is part of Odfjell SE, a Norwegian company actively involved in the worldwide transport and storage of mainly hazardous substances. Odfjell Rotterdam specialises in the aboveground storage of chemicals, petroleum products and waste material in tanks. Odfjell Rotterdam is classified in the highest risk category in the Netherlands for companies. A category that includes the large-scale production, processing or storage of hazardous substances. A special regime applies with regard to this: [translated] the Major Accidents (Risks) Decree (*Besluit risico's zware ongevallen - Brzo*). These companies are also referred to as company to which the Major Accidents (Risks) Decree applies.

The right to work with hazardous substances also entails obligations. Companies to which the Major Accidents (Risks) Decree applies have an important social responsibility with regard to the protection of employees on site (Occupational Health and Safety) but also regional residents and the environment (environmental safety). The Dutch Safety Board investigation shows that Odfjell failed in the fulfilment of their responsibilities. The maintenance of the out-of-date facilities (the oldest tanks were built in the 1950s and 1960s) was backlogged as from the purchase of the company in 2000. The maintenance backlog, however, was still ongoing twelve years later up to when operations were shut down. The company had, furthermore, no insight into the maintenance status of the tanks and pipes. The cooling and fire-extinguishing facilities were not even tested once between 2005 and 2011. In 2012, the facilities were tested and it became apparent that the cooling and fire-extinguishing facilities of most of the storage tanks were not operational.

There were no major fires or incidents involving direct victims at Odfjell Rotterdam from 2000 to 2012. The carcinogenic and highly flammable substance benzene and the highly flammable substance butane were released at Odfjell Rotterdam, which are serious emissions. The uncontrolled safety conditions meant that employees and the area run an increased (health) risk. Odfjell Rotterdam described the potential hazards connected to the company activities in what it refers to as the Safety Report. The company discussed the potential scenario of a toxic cloud created by a spill or fire in this report. The (health) impact could potentially reach the residents in, for example, Vlaardingen, Schiedam, Rotterdam, Rozenburg and Maassluis.

During the twelve years during which Odfjell operated the terminal in Rotterdam, the safety conditions never improved substantially. The Dutch Safety Board is surprised that a company that handles large quantities of hazardous substances could 'muddle on' for so long.

The company did not have the willingness or motivation to assure safety as best as possible. Only when the supervisory authorities insisted, were any plans drawn up and even then these were not or only partially implemented. An actual improvement of the safety situation was usually not the case. The interviews held by the Safety Board have shown that problems and issues were processed in an ad hoc and reactive manner at Odfjell Rotterdam. Safety was not integrated into operational management and there was no sense of urgency. The Dutch Safety Board believes this also entails a lack of professionalism: at a company to which the Major Accidents (Risks) Decree applies the careful handling of hazardous substances should form part of the management's and employees' DNA.

Internal supervision at Odfjell

Odfjell Rotterdam did not meet legal requirements or permit regulations for many years. Neither did the company operate within the company's own safety and environmental standards. The Dutch Safety Board finds it remarkable that Odfjell drew up company standards but that the parent company did not, subsequently, check whether Odfjell Rotterdam actually met these standards. The parent company kept its distance and trusted Odfjell Rotterdam management and the parties involved (supervisory authorities, customers and the certifier).

There were also internal supervision shortcomings at Odfjell Rotterdam. The Supervisory Board was responsible for the supervision of the management policy and the general day-to-day routine. The Norwegian parent company and, as of 2011, the American investment company that is the joint owner of Odfjell Rotterdam were represented in the Board of Directors. The emphasis of the internal supervision was on financial results and not on safety or the environment.

Granting permits

The DCMR Environmental Protection Agency Rijnmond granted the integrated environment permits to Odfjell Rotterdam on behalf of the Provincial Executive for the Province of Zuid-Holland. The DCMR was constructive and compliant for a very long time during the application and processing process for the permits. The company was met compliantly and sometimes even wrongfully. This is evident, for example, from the fact that many site changes were not duly processed through a change in the permit but with lighter procedures that were partially behind closed doors. The consequence of the lighter "notifications" procedure was that stakeholders (such as area residents and environmental organisations) were out of the loop from the decision-making procedures as they were not given the opportunity to object.

The Dutch Safety Board, moreover, discovered during the investigation that Odfjell Rotterdam had a hotchpotch of old and new permits in the period up to and including 2004. The permit situation became clearer in 2004 through a revision permit that replaced a large number of different permits. After 2004, however, the situation became more complex once again due to the large quantity of permits and accepted site changes. The supervisory authorities and the company had a hard job trying to make transparent which matters the company had to exactly meet. It is important within this context that the competences of the permit authority are broadened to ensure that it can be enforced with regard to companies to which the Major Accidents (Risks) Decree applies that they apply for a permit application.

Findings and recommendations by inspectors, for example, on the unenforceability of the regulations, seldom led to an adjustment of the permit. The incidents at the company site, the labelling of Odfjell Rotterdam as a problem company or what is commonly referred to as the [translated] 'Road map project' (*Achterblijverstraject*) did not lead the DCMR to consider whether the permit required amendment. This demonstrates that there was no continuous improvement cycle in the granting of permits process.

Supervision and enforcement

The supervisory authorities also often took a constructive approach with regard to Odfjell Rotterdam for a long time. The three supervisory authorities, the Environmental Protection Agency Rijnmond (DCMR), the SZW Inspectorate and the Rotterdam-Rijnmond Safety Region (VRR), had been aware of the poor safety conditions at Odfjell Rotterdam for many years. Serious breaches over the years, however, did not often lead to administrative sanctions. In cases when sanctions were indeed imposed, they did not lead to structural improvement of safety.

The DCMR approach to supervision, in particular, was based on a good relationship with the company, assuming that this would be the most effective method to assure safety at the company. The VRR did not have a tradition of enforcement and mirrored the DCMR approach. Even though the SZW Inspectorate followed a stricter guideline, it also mirrored the approach of the other supervisory authorities and especially from 2009 to 2011 and did not impose sanctions.

The Dutch Safety Board also believes that a good relationship between the supervisory authority and the company is important. The emphasis on a good relation in the case of the supervision of Odfjell Rotterdam, however, went beyond that which was acceptable. Instead of imposing sanctions, the supervisory authorities often decided to have an action plan drawn up, which was only really realised after long-term negotiations. The supervisory authorities, for example, committed to company plans due to which they were too close to the company to inspect and enforce critically and independently. Under such conditions, the supervising authority becomes more of an advisor and is not an inspecting authority. The close involvement made DCMR "blind" to the continuous flaws and the inability (or unwillingness) of the company to improve these situations. This is why it was possible that the DCMR, in particular, did not act very often against the shortcomings because it seemed to observe an apparent constructive attitude at the company. This attitude, however, was never translated into improved behaviour. With hindsight it must be realised that the supervising authorities were kept dangling: the company put off taking decisions and the supervising authorities accepted this for many years.

Inspection within the Major Accidents (Risks) Decree framework has a system-focused approach. It is a combination of system-level and physical inspection. At the system-level, the companies themselves are expected to document and demonstrate that the work is performed safely and that they have insight into the conditions of installations and systems. The government supervision of these companies starts with the question whether the companies have insight into their own safety situation. In addition, random checks are carried out to check whether the paper facts correspond with the actual situation on site.

A physical inspection of installations and systems may lead to a completely different conclusion than an inspection of documentation at a system-level. Such an approach does not work with regard to a company where installations and systems are not in order and that sets other priorities than safety. The risk is present that the attention focuses unilaterally on improving the system while, in practical terms, a safety gain is not achieved.

The structure selected in the Netherlands with regard to the system to enforce the Major Accidents (Risks) Decree, which is based on three Acts with each a different supervising authority, makes it essential that the three supervising authorities work together. Generally, the three supervising authorities worked well together during the inspection visits at Odfjell Rotterdam. The cooperation for what concerns enforcement, however, was not without difficulty. There were, for example, fundamental differences between the proposed enforcement approaches of the various supervising authorities. The SZW Inspectorate believed in strict enforcement while the DCMR believed in the positive effect of a cooperative attitude. The difference in vision resulted in the failure to produce a shared opinion and an effective enforcement approach. These differences were also related to regulations to be enforced that fell outside the scope of the Major Accidents (Risks) Decree itself. The SZW Inspectorate supervises compliance of strictly described obligations from the regulations related to working conditions and the DCMR and VRR compliance of more openly formulated standards in the integrated environmental permit and the company fire brigade designation. Only after the summer of 2011, after the discovery of the serious emissions of butane and benzene, did the supervising authorities act resolutely. During this period, the supervising authorities demonstrated that there really was another way of handling inspection and enforcement. For the first time in years, measures such as live tests of the fire-fighting equipment and unannounced inspections took place and sanctions were imposed. The information provided by whistleblowers and the media attention contributed to the pressure to change the approach with regard to Odfjell Rotterdam.

The fragmentation of the enforcement, the supervision based on negotiations regarding schedules instead of sanctions and insufficient inspection of the facts behind paper files. These are some of the factors that explain why the company was able to continue for so long while the supervisory authorities were watching. This resulted in a number of ongoing files that never reached a solution.

The supervisory authorities do have some autonomy, but in the end they always do their work at the instructions of a politically responsible administrator. The investigation has shown that the responsible administrators came to the realisation that intervention was necessary too late. In its report on the fire at Chemie-Pack in Moerdijk (2012), the Dutch Safety Board also came to the conclusion that the government was slow in its response to the lack of safety at a company to which the Major Accidents (Risks) Decree applies. The inspection report on fire safety where the storage of hazardous substances was concerned came to a similar conclusion.¹

¹ Inspectie Leefomgeving en Transport, *Stand van zaken naleving brandveiligheidseisen bij opslagen van gevaarlijke stoffen*, [translated] Human Environment and Transport Inspectorate, *Current situation regarding compliance with fire safety requirements with regard to the storage of hazardous substances*, 2012 update, 23 January 2013.

Consideration

Political/administrative context of supervision

An employee must be assured of a safe working environment, just as local residents must be assured of a safe living environment. This means that companies such as Odfjell that handle hazardous substances on a large scale have an important social responsibility. Therefore, companies must have a system of checks and balances at all levels to guarantee safety. In order to check whether these companies do indeed work safely, government supervision must be sufficiently equipped to identify any shortcomings in a timely manner and to authorise enforcement where needed. When viewed from this perspective, employees and local residents are entitled to sound supervision of these companies.

Government supervision is regularly a topic of political debate, particularly when incidents have occurred. This debate has two sides. When an incident has occurred, there is often a call for “more supervision” and much is expected in terms of perfectibility. At the same time, supervision is regarded as a ‘burden’. In this vision, companies and institutions are weighed down by administrative burdens due to the mandatory generation of accountability information within the framework of supervision and enforcement.

Both views (supervision as a remedy and supervision as a burden) have expressly developed over the past few years. Successive governments have announced different cycles of cutbacks, reorganisations and mergers of inspection departments with regard to the ‘burden’. The working method and intensity of supervision has also changed considerably. A development towards system-focused supervision and a reduction of supervision intensity is visible in basically all fields: supervision based on trust and based on the principle that the company is itself primarily responsible for ensuring safe operational management. The Dutch Safety Board has expressed its concern with regard to government-wide cutbacks where supervisory authorities are concerned before.² Inspections and most certainly enforcement activities are time-consuming and inspectors have only limited time available per company. The work itself is, moreover, not easy: inspectors have by definition a lack of knowledge regarding companies and the considerations are not always black and white. All supervisory authorities involved in this investigation have the same problem. Adequate supervision of the potentially most hazardous companies in the Netherlands is essential. This means that supervisory authorities must have sufficient knowledge, expertise, competences and resources to fulfil their tasks. It also means that the supervision must have sufficient depth and must be performed frequently. Those who are politically responsible must create such conditions that supervisory authorities can perform their tasks effectively.

Safety, the environment and the economy

Odfjell Rotterdam regarded safety as a cost item that decreased its profits. With a company such as Odfjell Rotterdam, it would have paid off if they had invested in preventive maintenance. A fire as the one that occurred at Chemie-Pack or a shutdown at the one that occurred at Odfjell Rotterdam is not desirable for any company in view of costs and a damaged reputation.

² Dutch Safety Board, *Veiligheid in perspectief (Safety in perspective)*, 2013.

The same applies to the continued effect on customers and other business contacts. The social costs of unsafe business operations can also be considerable. Examples of this are environmental and health damage and the costs involved in recovering from such damage (the cleanup costs following the fire at Chemie-Pack, for example, ran into tens of millions euros). The most important issue is and will, naturally, continue to be that if we invest in safety, we will prevent fatalities, injuries and the occurrence of large-scale damage.

Safety and the environment are not absolute values. Investments in safety and the environment are also balanced against other interests such as business climate and employment when it comes to the authorities. In the Rijnmond area, this field of tension with the port as an economic centre is evident. The DCMR and the VRR are executive bodies of local authorities. The investigation by the Dutch Safety Board shows that the DCMR, as the authority that issued permits, and the DCMR and the VRR, in their role of supervisory authorities, had a constructive approach and were compliant with Odfjell Rotterdam; the SZW Inspectorate also endorsed this approach. While performing their job, it is conceivable that these bodies anticipated the considerations that local administrators would make regarding the interests of the port (and, therefore, employment) and that of safety and the environment. This fits in with the adage of reducing 'legislative pressure' and the 'regulatory burden' for companies. However, the DCMR and the VRR are there to protect people and the environment. The final consideration of interests is the task of politicians to ensure a manageable decision-making process.

Broad responsibility

The Dutch Safety Board assumes that companies are primarily responsible for the safe performance of their activities. The government, in turn, must supervise this adequately. However, more is required. Other private parties (the Lloyd's certification authority, Shell as the largest customer, the Port of Rotterdam Authority, the Association of Independent Tank Storage Companies (VOTOB) and Deltalinqs sector associations and the trade unions) around Odfjell Rotterdam also have a role to play in the safety of companies to which the Major Accidents (Risks) Decree applies.

In the case of Odfjell, the investigated parties pointed towards 'the government' where Odfjell Rotterdam's compliance with legal and regulatory requirements is concerned. The Dutch Safety Board deems it necessary for these parties to be given and that they assume a greater autonomous responsibility with regard to the system to enforce the Major Accidents (Risks) Decree system. For example, a company that orders the performance of risky activities (and in a way outsources risks) must ensure that the contractor is indeed capable of performing the job in a safe manner. This is also referred to as 'chain responsibility'. The term 'chain responsibility' is endorsed on paper by Shell, amongst other companies, and the chemical sector associations. These associations endorse the basic principle that business is conducted solely with companies that have a solid safety culture in the chain.³

³ See the "Veiligheid Voorop" (Safety First) document (2011) signed by the chemical sector associations and VNO-NCW following the fire in Moerdijk.

The Dutch Safety Board is of the opinion that, where hazardous substances are concerned, companies are socially responsible for the way in which customers store, transport and/or process these substances. Obviously any company dealing with hazardous substances is itself first and foremost responsible for its own performance and operations (within the chain). In addition, a company has a responsibility towards companies that work with these products at the instructions of the company. In response to the draft report, Shell stated that the company (Odfjell Rotterdam) was first and foremost responsible for safety. Around this, the government supervises this safety. Shell is of the opinion that when the company and the government fulfil their responsibilities in the way they should, there is not much that involved business partners, such as customers and suppliers, need to check. This response is at odds with Shell's own basic principles.

The external supervision of the safety situation at a company such as Odfjell Rotterdam is not solely the government's responsibility. Customers have a social responsibility (particularly where hazardous substances are concerned) to make and keep the 'chain' safe. Some overlap of matters to be checked cannot be ruled out (or is desirable) to ensure a more robust system is in place. Any occurring flaws can then be better dealt with.

Publicly available information and trust

Different parties collected information on the safety situation at Odfjell Rotterdam: not only the supervisory authorities but also the Lloyd's certification authority and Shell, the largest customer. The latter two parties, however, did not attach consequences to the safety shortcomings they identified but put their trust in government supervision. Lloyd's repeatedly renewed the ISO 14001 certificate that focuses on compliance with environmental regulations, in spite of shortcomings that were identified during audits. Shell did not feel that it was responsible for checking whether Odfjell Rotterdam complied with rules. The Norwegian parent company also strongly relied on the ISO certificate and Dutch supervision. The information that was collected during audits by the inspection authorities, by the certification authority and by customers on the safety at Odfjell Rotterdam was not exchanged. None of the parties had an overall overview of the findings and shortcomings. The parties relied on each other's judgement for a long time. Only when the company was shut down in 2012 did it become clear that this trust was not based on anything solid. This clearly shows that a better exchange of safety information between the involved parties is essential in order to gain a clear insight into the safety situation at companies to which the Major Accidents (Risks) Decree applies and to better assess whether and when intervention is required.

Information exchange should not be limited to professional parties of the government and the business community. Citizens (local residents, direct stakeholders and the public in general) also benefit from publicly available information on risks, measures, supervision and enforcement. Making information publicly available is not a goal in itself, but a means to enable citizens to be made aware (via the media or some other way) of the situation and to promote a safe and healthy living environment.

In this way, citizens, the media and politicians can, as it were, shape their own supervision. Furthermore, making information on companies to which the Major Accidents (Risks) Decree applies available to citizens offers the possibility of restoring their trust in the safety of these companies and in the quality of the supervision activities related to these companies. More openness about the safety of high-risk companies also fits in with the new EU Directive Seveso III Directive that is to be implemented in Dutch legislation by mid 2015.

Improvement of the system enforcing the Major Accidents (Risks) Decree

Based on the results of this investigation, the Dutch Safety Board deems it necessary that structural lessons are learned where the system enforcing the Major Accidents (Risks) Decree as a whole is concerned. There is no clear institutional framework for supervision and enforcement based on the Major Accidents (Risks) Decree in the Netherlands because the responsibility is shared, the supervision is fragmented and the powers overlap. The State Secretary of Infrastructure and the Environment, who is responsible for the system, should, in particular, put effort into this. Due to the introduction of the regional agencies and the implementation of the [translated] 'Generic supervision revitalisation act' (*Wet Revitalisering generiek toezicht*), it is currently unclear to what extent the State Secretary is able to monitor and steer the [translated] system of granting permits, supervision and enforcement (*Stelsel van vergunningverlening, toezicht en handhaving – 'VTH system'*). As a result, the State Secretary has no clear position in the VTH system and is limited in his/her power to intervene. The Dutch Safety Board is of the opinion that the State Secretary of Infrastructure and the Environment should be given the power to intervene with regard to the supervisory authorities and competent authorities linked to enforcing the Major Accidents (Risks) Decree when necessary to ensure effective enforcement.

In addition to the State Secretary's role and position, there is the more general question as to whether the system to enforce the Major Accidents (Risks) Decree should be abandoned in view of the bottlenecks. A radical change (for example, the deployment of one national supervisory authority to enforce the Major Accidents (Risks) Decree) would probably take years due to the administrative complexity, while the advantages are not evident beforehand and might create other disadvantages. The prospect of a decision-making process that would take years is disproportionate to the urgency of a number of the above determined bottlenecks.

However, the Dutch Safety Board does see opportunities to realise improvement within a reasonable term. For example, the implementation of the European Seveso III Directive in Dutch legislation and regulations could be used to address a number of the more persistent bottlenecks. The enforcement fragmentation has been a known problem for many years now and is also evident from this investigation. An 'effective' sanction regime is mandatory with regard to Seveso III. Furthermore, a more clear allocation of responsibilities would be required as well as effective cooperation between administrative and criminal enforcers. Within this context, it must be ensured that the supervisory authorities that enforce the Major Accidents (Risks) Decree harmonise their enforcement policy and sanctions with each other and the Public Prosecution Service. It emerged, for that matter, during the last phase before Odfjell Rotterdam was shut down that the supervisory authorities were able to act effectively *jointly*.

Various aspects of the system are not clear. For example, it would be to everyone's benefit if the regulations, the used terminology and the standards that apply to companies to which the Major Accidents (Risks) Decree applies would be clearer and more unambiguous. The integrated environmental permit and the company fire brigade designation have overlapping powers and contradictions regarding enforcement. These must be resolved.

Implemented measures and supervision

After operations were shut down at Odfjell Rotterdam, the involved parties announced a range of measures. The Dutch Safety Board has not investigated whether these measures have actually been implemented and/or were effective. The Dutch Safety Board concludes that, in view of the announced initiatives, the parties are prepared to learn and to modify their behaviour, working methods and procedures. The Dutch Safety Board is positive about this. It is striking, though, that the involved parties only came into action after they were put under pressure due to the large-scale public and political commotion following incidents, information provided by whistleblowers and media attention. This rise in initiatives and action is also in sharp contrast to the attitude of the same parties during the years before the shutdown. After all, many shortcomings had been known for years by those immediately involved. The Dutch Safety Board, therefore, wonders whether the involved parties' willingness to change will also remain without external pressure.

Independently from possible amendments to legislation, procedures and processes, supervisory authorities must act decisively. A good relationship between the supervisory authority and the company is a positive thing, especially when both realise the importance of safe operational management. However, professional distance must always be maintained to ensure effective and independent supervision.

Recommendations

The Dutch Safety Board has arrived at the following recommendations:

Odfjell

Odfjell Rotterdam is primarily responsible for its own safety. Odfjell Rotterdam was unable to manage the safety situation at the company for many years. Safety was not integrated into the operational management. As a result, employees and the surrounding area ran an increased risk and the trust of citizens in the company was damaged. When Odfjell Rotterdam was shut down, the company announced and took measures. The improvements at Odfjell since the summer of 2012 focused on the terminal's technical integrity, the safety culture, the primary process and the safety management system.⁴ The Dutch Safety Board wants to make the following additional recommendations in addition to these improvements implemented by the company.

4 See annex M.

To the Supervisory Board responsible for Odfjell Terminals Rotterdam B.V.:

1. Draw up clear safety objectives and tasks for Odfjell Rotterdam's management team and structurally assess the team's performance where safety is concerned. Ensure that safety incidents are immediately reported by the management of Odfjell Rotterdam and are assessed by you.

Chain responsibility of chemical companies in Rijnmond

In the report on the fire of Chemie-Pack at Moerdijk, the Dutch Safety Board recommended that the various sector associations⁵ have suppliers and buyers set requirements regarding the safety level at companies they do business with. In this investigation, the Dutch Safety Board again found that customers can do more to improve the safety situation at the companies they do business with. The Dutch Safety Board also found that in the sector it was still insufficiently clear about what chain cooperation entails and how it can be improved and strengthened. To further stimulate this process, the Dutch Safety Board recommends that chemical companies take more action quickly. The Dutch Safety Board expects customers of companies such as Odfjell Terminals Rotterdam and the Port of Rotterdam Authority to take the lead in this.

*To the chairpersons of the boards of the customers of Odfjell Terminals Rotterdam:*⁶

2. Provide concrete meaning and interpretation to chain cooperation and responsibility. Use jointly determined safety performance and developed indicators and standards to define and assess a company's safety level, pay mutual company visits and regularly gain information from the supervisory authorities. Determine the consequences when companies (both the customer and contractor) do not comply with this safety performance. Determine how certification can play a more effective part in this.

To the Port of Rotterdam Authority:

3. Determine the extent to which companies that want to establish themselves on land managed by the Port of Rotterdam Authority (through a lease or otherwise) comply with the safety level that applies to them.

Granting of permits, supervision and enforcement in Rijnmond

The province of Zuid-Holland is responsible for granting permits. The province of Zuid-Holland, the Rotterdam-Rijnmond safety region and the SZW Inspectorate are responsible for supervision and enforcement. The province of Zuid-Holland has delegated the above tasks to the DCMR. The working procedure of the government used to realise its permit granting, supervision and enforcement tasks regarding the Major Accidents (Risks) Decree did not lead to a structural safety management and control at Odfjell Terminals Rotterdam during the period running up to the summer of 2012. As a result, the trust in the government's supervision of companies to which the Major Accidents (Risks) Decree applies was damaged.

⁵ VNO-NCW, VNCI, VHCP, CNPI and VOTOB.

⁶ The Dutch Safety Board has written to the relevant companies in the Netherlands to which the Major Accidents (Risks) Decree applies about this matter.

When Odfjell Terminals Rotterdam was shut down, the competent authorities and their agencies announced improvements.⁷ The Dutch Safety Board made the following additional recommendations:

To the Provincial Executive of the province of Zuid-Holland and the DCMR:

4. a. Ensure that the information on the safety level at companies to which the Major Accidents (Risks) Decree applies is shared with stakeholders. This entails supervision and enforcement information, information from certification authorities, audit reports of customers, and other information.
- b. Provide one consolidated report (document or otherwise) of the current permits per company to which the Major Accidents (Risks) Decree applies to ensure all obligations of the company are clear at all times.

To the Provincial Executive of the province of Zuid-Holland, the general board of the Rotterdam-Rijnmond safety region and the Minister of Social Affairs and Employment:

5. Regularly and clearly inform citizens about supervision and enforcement activities and the results of these activities at companies to which the Major Accidents (Risks) Decree applies.

Supervision and enforcement system related to the Major Accidents (Risks) Decree

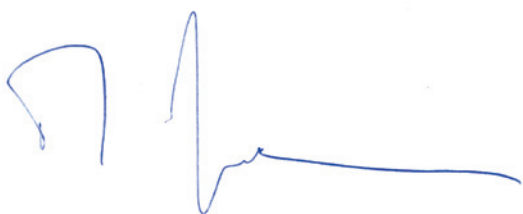
There is no clear institutional framework for supervision and enforcement based on the Major Accidents (Risks) Decree in the Netherlands because the responsibility is shared, the supervision is fragmented and the competences overlap. It has been established before that this stands in the way of effective enforcement. Various initiatives have recently been implemented to improve this situation. Recently, 28 regional environmental services of regional agencies (RUDs) have been set up. Six of these regional agencies are based on the Major Accidents (Risks) Decree of which the DCMR is the national coordinator. The Dutch Safety Board wonders whether the regional agencies responsible for the Major Accidents (Risks) Decree have sufficient knowledge, expertise, competences and resources to fulfil their tasks and whether the DCMR is capable of fulfilling its role as a coordinator. In view of the recent change to the interadministrative supervision, the State Secretary of Infrastructure and the Environment has no clear position in the granting of permits, supervision and enforcement system. The State Secretary's information position is under pressure and the State Secretary has limited options to intervene. To what extent this will result in a sustainable system to enforce the Major Accidents (Risks) Decree in the long run remains to be seen. Based on the investigation into Odfjell Terminals Rotterdam, the earlier investigation into the fire of Chemie-Pack at Moerdijk and analyses of other investigations, the Dutch Safety Board has arrived at the following recommendations regarding the system to supervise and enforce compliance with the Major Accidents (Risks) Decree:

⁷ See annex M.

To the State Secretary of Infrastructure and the Environment responsible for the system to enforce the Major Accidents (Risks) Decree:

6. a. Legally arrange for the State Secretary of Infrastructure and the Environment to be given the power to intervene with regard to the supervisory and competent authorities that are responsible for enforcing the Major Accidents (Risks) Decree when necessary to ensure effective enforcement.

- b. Ensure that the supervisory authorities that are responsible for enforcing the Major Accidents (Risks) Decree harmonise their enforcement policy and sanctions with each other and the Public Prosecution Service.



T.H.J. Joustra
Chairman of the Dutch Safety Board



M. Visser
General Secretary

The Dutch Safety Board assumes that companies are and remain primarily responsible for their own safety as well as for the safety of their area. The government cannot assume this responsibility and is, therefore, not primarily responsible for any (un)safe conditions that may occur. The government has the obligation to verify that a company is compliant with legislation and regulations that have been drafted for the safety of people and their environment. The government should also ensure that any observed unsafe situation is addressed. The government grants permits, supervises and enforces the law for this purpose.

The above has been taken as the principle when formulating the central investigation question. The central investigation question is the following:

What were the roles played by Odfjell Rotterdam, the permit authority, the supervisors and enforcers, legislation and the other parties in the development and control of the safety situation at the company?

The Dutch Safety Board has studied whether the Odfjell Rotterdam site to which the Major Accidents (Risks) Decree applies fulfilled its safety responsibilities and whether the government (of the Netherlands) and other parties performed their monitoring duties with regard to Odfjell Rotterdam in this investigation.

Odfjell Rotterdam

1. There was a long-term unmanageable safety situation at Odfjell Rotterdam and legal and regulatory requirements were not met. This meant that employees and the area run an increased risk.
 - Odfjell Rotterdam did not prioritise safety and did not succeed in meeting legislation and regulations that apply to an organisation to which the Major Accidents (Risks) Decree applies with regard to crucial parts from 2000 to 2012.
 - Odfjell Rotterdam did not have full insight into its operational processes, systems and related risks. This meant that the foundation for safety management was not available.
 - Odfjell Rotterdam had procedures in place to identify and assess risks. In practice, however, this process did not adequately identify hazards and did not provide a complete picture of the main risks.
 - The Odfjell Rotterdam Safety Management System was created based on legal, regulatory and supervisory requirements. The Odfjell Rotterdam safety approach was not based on any safety philosophy by the company itself. The Odfjell Rotterdam Safety Management System had structural shortcomings.

- Odfjell Rotterdam's procedures and instructions did not safeguard safe operations. The Safety Management System also lacked a clear and active coordination of safety tasks and employees' knowledge and competence were not assured.
 - A structural approach to monitoring safety and following up on activities was absent at Odfjell Rotterdam so that the intended improvement cycle of the Safety Management System was not achieved.
2. During the investigated period from 2000 up until the shutting down of operations in 2012, Odfjell Rotterdam management was not able to develop a safety action plan and establish priorities to attain the required safety standard for the structural control of safety-critical processes. Management has, therefore, not fulfilled its safety-related responsibilities.
- In practice, Odfjell Rotterdam was run on the basis of the knowledge and expertise present on the work floor while management was not actively involved. Neither did Odfjell Rotterdam have a stable management organisation that was up-to-date on safety performance during the considered period. Because of this, there was no structural management based on safety.
 - The Odfjell company and the Odfjell Rotterdam Supervisory Board managed Odfjell Rotterdam based on financial issues. Neither the Odfjell company nor the Supervisory Board employed any enforced monitoring mechanism to assure Odfjell Rotterdam's compliance with Odfjell corporate standards and values regarding safety and the environment.
 - The Odfjell Rotterdam company culture was characterised as being insular, having a blame culture and a calculating behaviour. Safety management was not seen as a shared interest. Lessons were not learned from each other and from (near) accidents. This impeded that safety was structurally safeguarded within the organisation.

Granting permits, supervision and enforcement

3. The complexity of the statutory framework for the granting of permits and the way in which the DCMR fulfilled its task with regard to the granting of permits impeded enforcement action at Odfjell Rotterdam in several ways.
- The permit situation ('*Wabo-Wm*' *environmental permit*) at Odfjell Rotterdam was complex and poorly organised.
 - Due to a lack of information in the permit application, the Odfjell Rotterdam permit contained obligations to provide this information afterwards. This was related to the carrying out of investigations and the drawing up of programmes and action plans regarding process safety. This meant that it was unclear at the time of granting the permit which safety measures were to be taken for a number of operational processes.
 - The permit includes inconsistently used terminology and vague concepts. Because of this, the permit was difficult to enforce.
 - To date, the DCMR has not updated the permit as a result of the new insights contained in the 2008 PGS 29.

- The process of the granting of permits in relation to Odfjell Rotterdam was not continuously improved.
 - The integrated environmental permit and the company fire brigade designation contained requirements regarding the same topics. Overlapping and differing requirements created a lack of clarity for both the supervisory authority and the company. Furthermore, it was unclear which supervisory authority was responsible for enforcement in case of an established breach.
 - Accepting reports for modifications of the site up to October 2012 that actually required a modification permit has limited the possibilities for enforcing the implementation of safety measures.
 - By accepting reports as notifications up to October 2012, the DCMR failed to apply the law. As a result, enforcement possibilities were limited and stakeholders (local residents and environmental groups) and the legal advisors were not involved in the decision-making process. Important correction mechanisms with regard to decision making could not be applied because of this.
4. The working procedure of the DCMR, the VRR, the SZW Inspectorate and the Public Prosecution Service used to realise their supervision and enforcement tasks did not led to structural safety management at Odfjell Rotterdam.
- The DCMR opted for an approach which consisted of building a good relationship with the company and allowing room for negotiation.
 - The DCMR and the (legal predecessors of) the VRR implemented for many years an approach which did not lead to administrative sanctions. Discovered breaches that can be qualified as major from a process safety perspective are: shortcomings in the Safety Management System, not testing the fire-extinguishing and cooling facilities, shortcomings in the maintenance of storage tanks and the inaccessibility of control points of the cooling water system. The DCMR did not act according to the provincial sanction strategy.
 - What is commonly referred to as 'negotiated supervision' leads to a focus on the action plans drawn up by the company. Imposing sanctions is less obvious as the supervisory authority is committed to the action plan. This working procedure makes safety a negotiable issue.
 - The VRR does not have a history as an enforcement body and is not organised for this task. The VRR and its legal predecessors also decided to use negotiated supervision in their approach.
 - The SZW Inspectorate did not consider the relationship with the company to be the basic principle and implemented a tight enforcement approach where occupational health and safety regulations were concerned.
 - The constructive attitude of Odfjell Rotterdam during the 'Road map project' led the DCMR to believe in the improvement potential of Odfjell Rotterdam. The decreasing number of discovered breaches confirmed this opinion. Contradicting signs were not acted upon. The VRR and the SZW Inspectorate also continued to support the 'Road map project'.
 - System supervision is based on the principle that companies take their responsibilities for systematic safety assurance. For companies that are incapable of doing this, such as Odfjell Rotterdam during the investigated period, emphasis on system supervision is not appropriate.

- The DCMR, VRR and SZW Inspectorate supervisory authorities work well together and are effective in their inspections to enforce the Major Accidents (Risks) Decree. Where the Odfjell case is concerned, there are no indications that problems in the structure or organisation regarding the inspections to enforce the Major Accidents (Risks) Decree have directly contributed to ineffective supervision.
 - The vision of the three supervisory authorities on the use of enforcement actions differs fundamentally. This is caused by differences in culture and management systems.
 - Criminal enforcement at Odfjell Rotterdam was not a demonstrable deterrent.
 - Where the Odfjell case is concerned, the Public Prosecution Service and the administrative supervisory authorities did not structurally cooperate, harmonise or discuss their activities. There was no management of the application of the sanction strategy.
 - There are various policy documents that provide a framework for a criminal approach of the Public Prosecuting Service in force. However, it is unclear which document should be applied when.
5. The administrative involvement in safety at Odfjell Rotterdam was minimal up to halfway through 2011.
- In spite of the fact that Odfjell Rotterdam for many years defaulted in the area of safety and did not comply with legal and regulatory requirements, the administrators did not actively steer the enforcement approach at Odfjell Rotterdam until the autumn of 2011. This procedure may be explainable in light of a time when less supervision and more confidence in companies was the motto but it still does not justify it.

Other parties

6. The contribution of the other parties did not lead to structural safety management at Odfjell Rotterdam.
- The fact that Odfjell Rotterdam had the ISO 14001 certificate suggested that the company had a working environmental management system in place. Where compliance with legal and regulatory requirements was concerned, Odfjell Rotterdam regularly failed to do so. This discrepancy damaged confidence in the certification.
 - Shell shows commitment to the safe operation of physical systems that are used for Shell contracts. Shell has not fulfilled its responsibility based on the chain responsibilities and its own safety ambitions as a customer of Odfjell Rotterdam since the fire-extinguishing and cooling facilities of some of the tanks rented by Shell were not up to standard.
 - Shortly before the shutdown, the Port of Rotterdam Authority recommended that Odfjell Rotterdam shut down its operations. Until this point, the Port of Rotterdam Authority had not exerted influence on safety management at Odfjell Rotterdam.

System to enforce the Dutch Major Accidents (Risks) Decree

7. There is no clear institutional framework for supervision of the enforcement of the Major Accidents (Risks) Decree because the responsibility is shared, the supervision is fragmented, the authority overlaps and the legal obligations are unclear.
 - None of the supervising bodies has final responsibility due to the fragmentation of the supervision of the enforcement of the Major Accidents (Risks) Decree and the overlap in tasks and authorisation and, therefore, intensive cooperation and harmonisation is required.
 - The enforcement can be impeded by the fragmentation because every supervisory authority can only argue imposing a sanction based on their own statutory framework.
 - The regional agencies (RUDs) to enforce the Major Accidents (Risks) Decree do not currently provide a solution for the problems caused by the fragmentation of supervision.
 - Obligations related to the Major Accidents (Risks) Decree contain terminology and open standards that require further specification before the compliance thereof can be supervised.
 - The approach to base the enforcement of the supervision to enforce the Major Accidents (Risks) Decree on specific requirements from other legislation and regulations and not the Major Accidents (Risks) Decree as such does not guarantee the improvement of the Safety Management System.
 - The integrated environmental permit and the company fire brigade designation are not harmonised appropriately, which has led to existing overlaps as well as differences in requirements.
 - The system of the involved parties did not include information exchange about supervision results. The information from the public supervision inspections, certification and customer audits was available in the system in a fragmented manner.
 - In view of the recent change to the interadministrative supervision, the State Secretary of Infrastructure and the Environment has no clear position in the granting of permits, supervision and enforcement system. The State Secretary's information position is under pressure and the State Secretary has limited options to intervene.

Actions and developments following the shutdown

8. Since the operations at Odfjell Rotterdam were shut down, the involved parties have taken various initiatives to improve the safety, the process of granting of permits, supervision and enforcement and management of the risks at their own company or other, similar companies. The Dutch Safety Board did not conduct an investigation into the effect and efficiency of these actions and initiatives.



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