

Subject: LVNL, UPD fire protection installations "Annex"

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1.1 INTRODUCTION

These notes summarize remarks regarding the basic design document (UPD) of the fire protection installations for the extension of LVNL (Annex building).

It is based up on the UPD provided by Kuijpers Beveiligingssystemen B.V., Project no 77450, dated June 22, 2018.

Please note that the remarks have been stated in a direct and concise way, to keep them readable and give clear input to a discussion.

1.2 REMARKS UPD (SUMMARY).

Note: Only remarks regarding property-business interruption exposures have been stated. Other topics are not within our scope.

The following remarks are applicable:

General/process:

1. "Doel van de Installatie". 2.1/Page 6.
"Blusgasinstallatie": detection and extinguishing.
To be stated clearly, what maximum damage is accepted.
This determines the level of detection and extinguishing.
For example: loss of a cabinet is accepted (one system only - back up elsewhere), but the rest of the equipment in the room is to stay intact and functioning. *(This implicates detection and extinguishing at cabinet level).*
2. *Inspectie certificaat (2.2, page 9, 9th bullet point):*
As all fire protection heavily relates to each other, *all* installations (watermist, fire detection systems and gaseous extinguishing systems) have to be certified, according to the applicable CCV certification schemes.
3. *Betrokken/belanghebbende partijen. 2.3/Page 9.*
As an insurer we are stakeholders and do have "wishes" (and "no-go's") regarding applicable guidelines, systems design and scope, and the "end situation".
We accept the guidelines as currently stated in chapter 3. Any changes there-in we would like to be informed of.
As per this document (see next points) we have remarks, some critical related the design and proposed result.
We would like to be recognised as stakeholder in the UPD. Of course, the final decision is all upto the principal, LVNL.

Technical:

4. The UPD does not state the nature of construction, insulation and other materials used for the building and bridge..
The UPD should explicitly state that these are non-combustible (otherwise the fire safety concept is not valid).
5. Automatic fire detection, airflow. Page 20-26.
Airflows do interfere with smoke: both by cooling it and also deviate the direction of the plume.
As per standard (NEN 2535) it should be confirmed - tested that also in ventilated/air conditioned rooms/cabinets the fire detection is able to detect the smoke, within the required time. This

relates a.o to the plenum in the OPS room, Consoles and the hardware room (hot alley).

Testing method 1 (Proefbrand 1 –PU foam) is not allowed. Testing method 2 (Proefbrand 2 wood blocks) is only allowed in case of room level detection. For cabinets, consoles and the hot alley of the hardware room, testing method 5 (PVC wire) is appropriate.

Related to the above, we expect the hardware room to be equipped with aspiration type smoke detection. The same accounts for the air-inlets of the CRAC units.

Regarding the OPS room: note that the watermist system is designed as a pre-action system.

Delay or failure of smoke detection will cause the watermist system not to operate properly.

6. *Airconditioning systemen (building):*

Central units to be equipped internally with smoke detection systems.

7. *Watermist 8.5/page 52,53:*

A deviation from the guidelines is mentioned. Please discuss with the certifying body whether this is critical/acceptable related to the objects of the protection.

8. (8.11/Page 58,59) *Storage in relation to watermist protection.*

Strict requirements are applicable regarding nature of storage (if any). Please check the limitations (refer to the Diom mentioned) and verify whether these can be met.

9. *Blusgas - Gaseous extinguishing systems. 9.2/Page 61 etc.*

These systems are located in rooms with most critical equipment. As previously stated the way of triggering the protection systems is crucial. The rooms where these systems are located do have forced airflows, due to air conditioning systems present. This will interfere with smoke detection. Smoke tests have to be done to determine adequate smoke detection design. Note that these should be as close to normal operational situations as possible.

This (and the aim of the protection) is to be described comprehensively in the UPD.

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