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The Total Loss Iceberg from a Major Fire (AZF Toulouse)

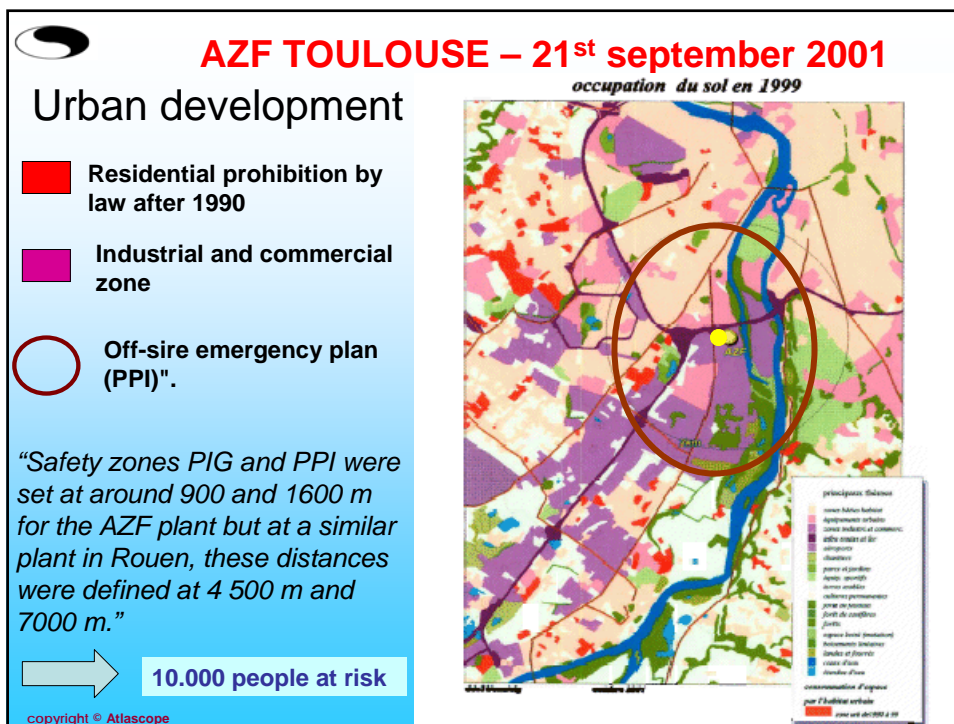
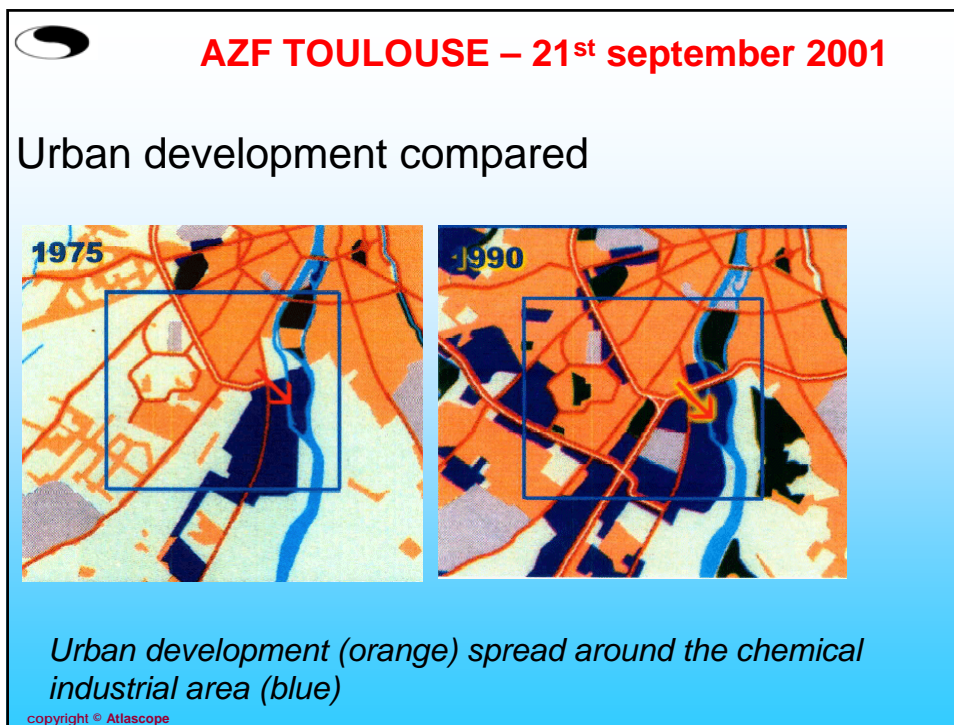
Alex Dali


 **AZF TOULOUSE - 21 september 2001**

Chemical plants on the South of Toulouse





- ☐ AZF – **Ammoniac**
- ☐ SNPE – **Chlorine**
- ☐ Tolochimie - **Phosgene**








AZF TOULOUSE – 21st september 2001


- Largest **fertiliser** manufacturer, Seveso tiers 1
- **Outskirts** of Toulouse, 700.000 inhabitants
- 266 AZF employees + 100 sub-contractors
- Storage of 6.300 T of ammonia, 6.000 T of **ammonium nitrate** and 30.000 T of fertilizer
- **Explosion** : warehouse of 400T « ammonium nitrate »
- Earthquake measuring **3,4** on the Richter scale

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AZF TOULOUSE – 21st september 2001

Views of the explosion



Impact of the explosion



Figure 5 : Vue du magasin « Darty » depuis un point situé à 320 m au Nord du cratère

Supermarket Darty located at 320 meters from the impact

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Building the Total Cost of Risk...
As defined in the ARM methodology

- Human losses
- Property losses
- Liability losses
- Net income losses



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Human losses

- 14 employees of AZF
- 8 sub-contractors of AZF
- 8 outside people

30 dead

- 2.500 persons injured**



Visible



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30 dead

Human losses



- **14.000 persons injured**
- **1.800 persons with permanent disability**



- **Health affected :**
 Medical consultation & Psychological help : 15.000 & 10.000 people
 Sleep trouble, concentration difficulties, irritability : 50.000 persons
- **Family affected :**
 Temporary relocation : 10.000 persons
 Behaviour problems with children (school, sleep, personality)
- **Society affected :**
 Know someone dead : 1.500 persons
 Know someone injured : 48.000 persons




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Property losses




Complete destruction of the AZF plant and the surrounding area




Destruction of hundred of houses and public spaces
Picture : Gallieni secondary school (1400 students)



Complete destruction of offices spaces
Picture : DARTY commercial center





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AZF plant (Group Total)

Property losses







Cautious : Numbers mentioned are indicative only

-  11.000 private houses : 220 millions
-  16.000 public houses : 100 millions


} 27.000 houses damaged

-  Around **5.000** private and artisanal **companies** : 170 millions
-  **100.000 m2** of office space destroyed
-  Public transport company SEMVAT : 22 millions (+150 buses)

} Private companies

-  **193** public **offices** damaged : 90 millions
-  **68** **schools** damaged, including 2 schools to be rebuilt, 5 high schools including the University Paul Sabatier and INPT institute
-  Public facilities including 17 nurseries, 3 gymnasies, 2 swimming pools, Sport hall – 60 millions
-  **Hospitals** : 76 millions
-  Roads and infrastructure : 30 millions
-  Others : 70 millions

} Public buildings



Hidden

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Liability losses



Premises and operations : human (not employees) and property losses occurred on and outside premises (negligence)



Workers' compensation : Death of 13 employees + unknown number of injured employees occurred on and outside premises



Environment : Clean-up pollution operation and rehabilitation of 220 hectares (35 000 meters cubes of treated soil – 5 years operation –(250 millions €)



Directors' and officers' : Injury resulted from wrongful act or omissions of Director or officers



Visible

Legal actions on going....
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10-6



Liability losses







Premises and operations : impact of population, productivity + mandatory closing

Workers' compensation (impact of employees of Total + role of the CHSCT reinforced)

Environment :

- Pollution clean-up
- New French law Bachelot
- Reinforcement of the European SEVESO Directive

Directors' and officers' : major legal battle on going


« **Moral** » liability : Helping those losing, jobs, broken families, new investments in the region, etc.



Legal battle on going,...

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Contributions of the French law Bachelot.

« alert et transparency » -

➔ Information and transparency on industrial risks

- Publication of operating permits delivered under SEVESO
- Full transparency on information of upper-tier plants
- Creation of CLIC around each upper-tier SEVESO plants

➔ Urbanisation control

- Technological Risk Prevention Plans (called PPRT)
- Possibilities of expropriation and « délaissement »

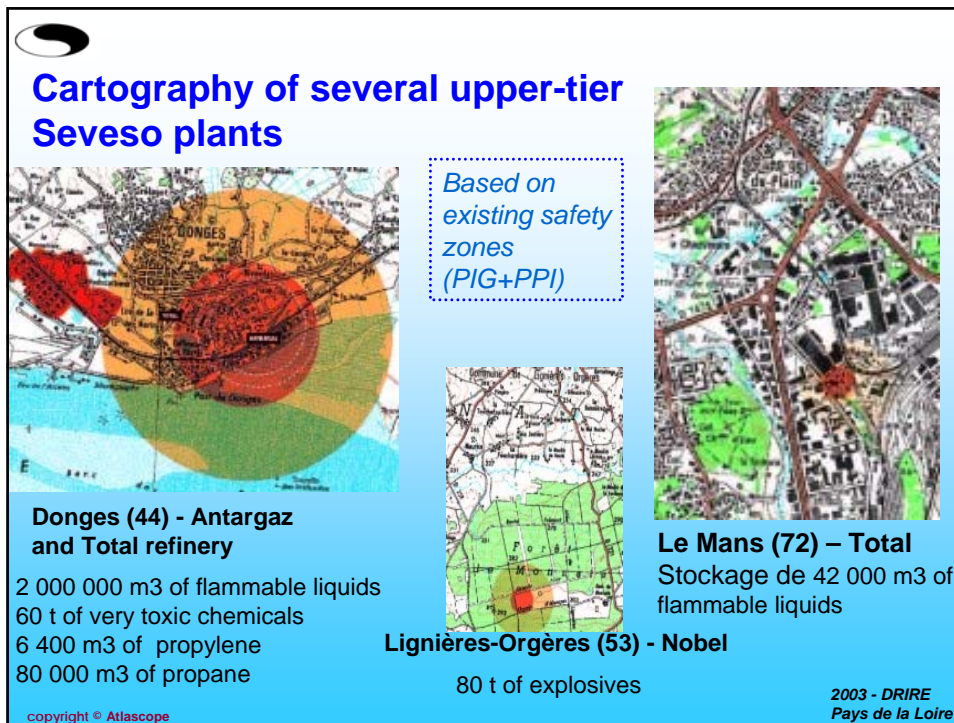
➔ Prevention of industrial disasters

- Complete re-assessment of SEVESO plants (*reduction at the source*)
- Creation of a national risk assessment standard
- Strengthening the role of the INERIS

➔ Insurance coverage

- Creation of a technological disaster fund (art.17)

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Net income losses

Caution: Numbers mentioned are indicative only

Insurance impact

- Management of 75.000 declarations
- Total insured cost of 1.4 billions


Financial impact

- Closing Tolochimie (106 employees)
- SNPE (safety reinforced 16 mill.) then closed (492 employees)

Legal actions on going....

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Net income losses

Cautious : Numbers mentioned are indicative only

- 8 private companies out of business
- financial difficulties for 30.000 individuals, for companies
- Creation of a large medical center (PPP of 1 billions)

Professional impact

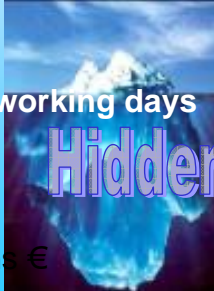
- 4.600 people – unemployment
- 200.000 people daily affected at work

Medical impact (loss of working days)


- 250.000 people for at least one day, average 31 working days

Reputation

- Total quoted in 15 CSR funds
- Large advertisement budget – reported 25 million €



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AZF disaster : Sharing responsibilities

Cautious : Informations extracted from the press, research paper or books written on the event

Operator responsibility ?
↔
Public authorities responsibility ?

YES		NO		YES		NO	
Major exposure to employees and residents	Plant located since early 1900s	Delivery of permits in prohibited areas	Costly resettlement	Lack of political will	Preserve job	Opposition of local residents to maintain this activity	Major employer
Passive attitude towards urbanisation	Costly delocalisation	Major tax revenue for the municipality	Taxes have benefit the community for years	No information to the public	Safety reports are under the responsibility of the industry	Lack of emergency measures	Risk under-estimated (not prepared for such a scenario)
Lack of prevention and protection	Weak law enforcement by DRIRE	DRIRE negligence	State intervention	No crisis management plan			
No direct indemnisation by AZF (TOTAL)	Activities managed by sub-contractors						
Negligent safety report	Approved inspection by DRIRE						
No recognition of any wrong-doing	No obligation imposed by ISO ou Responsible Care						

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AZF disaster : A « common » disaster


Operator responsibility ? ↔ Public authorities responsibility ?

YES	<ul style="list-style-type: none"> • <i>Convinced of absence of peril</i> • <i>Adversion to complexity</i> • <i>No-communication attitude</i> • <i>Production needs denies safety</i> • <i>Dilution of responsibility</i> • <i>Ambiguities</i> • <i>No preparation for crisis</i> • <i>etc.</i> <p style="color: red; font-weight: bold;">→ Cindynic approach</p>	NO
Major exposure to employees and residents		Costly resettlement
Passive attitude towards urbanisation		Preserve job
Lack of prevention and protection		Major employer
No direct indemnisation by AZF (TOTAL)		Taxes have benefit the community for years
Negligent safety report		Safety reports are under the responsibility of the industry
No recognition of any wrong-doing		Risk under-estimated (not prepared for such a scenario)
	State intervention	

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Causes of the explosion ?

« Officially » : Accident ↔ « Group Total » : Malicious act



AZF
UN SILENCE
D'ÉTAT

Trial continue :
February
2009....



AZF
TOULOUSE
révélations sur la catastrophe
Quelle vérité ?

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