

Some emotional aspects of the nuclear image

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Ingénieur and publisher

WNU, August 2, 2010

Structure of the conference

- Importance of public opinion
 - The influence of emotions
 - The power of fiction
- Nuclear and fiction : dreams and nightmares
- Should nuclear communicators be more emotive and use fiction as well ?

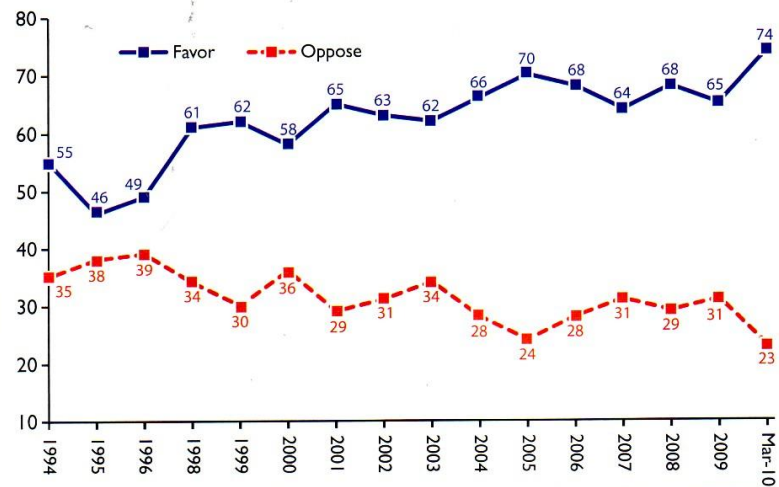
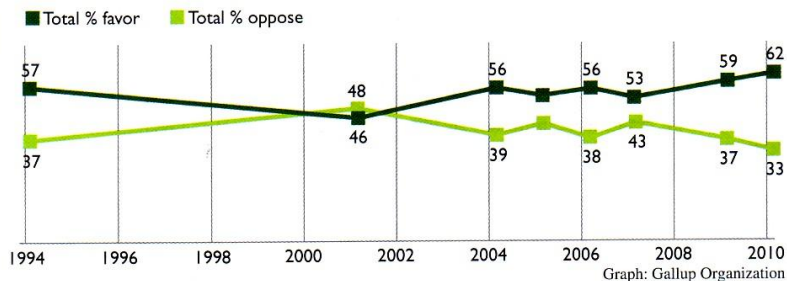
Is it important to reach everyone ?



- Yes, because people vote in referendum
- Yes, because public opinion influences the political decision more than any experts' report
- Yes, because we live in « emocracy »

A favorable public opinion today

Percent Who Favor and Oppose Nuclear Energy: 1994–March 2010*



*Percentages in this graph are averages of responses from two or more surveys conducted in a year.

République tchèque*	64%	Italie	43%
Lituanie*	64%	Estonie	41%
Hongrie*	63%	Pologne	39%
Bulgarie*	63%	Danemark	36%
Suède*	62%	Lettonie	35%
Finlande*	61%	Roumanie*	35%
Slovaquie*	60%	Luxembourg	34%
Pays-Bas*	55%	Espagne*	24%
France*	52%	Irlande	24%
Slovénie*	51%	Portugal	23%
Belgique*	50%	Grèce	18%
Royaume-Uni*	50%	Malte	15%
Allemagne*	45%	Autriche	14%
Union européenne (27)	44%	Chypre	7%

Comment in a 2009 survey

- « Policy makers and generators should not assume that this makes consent easy to achieve or maintain. Government and the energy industry must take note of the **continued fragility of popular support** for nuclear power ».

Sander van't Noordende
CEO Accenture Resources

Do people listen to our message ?

Some people do, specially in face to face communication

Others :

- have no time
- are not interested
- or lack the education



And they probably are the majority ...

To be memorized, a message
requires :

- To charm
- To stir
- To convince

In this order, already according to Cicero ...

How did the nuclear industry communicate ?

- It wanted first to convince
 - It refused to be emotive
- It did not really want to charm

And this did not really work ...

Influence of emotion

- *An information is best memorized when carried by emotion. Statistics are boring, dramas retain attention and alter memory to such a point that it becomes difficult to separate the exceptionally from the extremely dangerous,...*

- J. de Kersvadoué

- In *Les prêcheurs de l'apocalypse* Plon 2007

Greenpeace has a good grasp of the subject !



Their actions jostle our
rational arguments
and stir people's
emotions ...

Does fiction do that as
well ?

Dramatise for better marketing

- *Hollywood, never one to miss out on revenue making idea, long ago recognized the selling power of fear. Whether or not fear is justified is irrelevant. After all, the first rule of moviemaking is not to let the truth get in the way of a good story.*
 - Wayne Smith in Nuclearspace.com 2002

Reality withdraws

- The most important thing to keep in mind about nuclear movies is that reality takes a backseat to what is dramatically acceptable in a script.

Guy Philippi

Script reader in Hollywood

since 20 years

Panel ANS 2008



The influence of novels

- *Quand j'ai quelque chose d'important à dire philosophiquement, je préfère le faire dire d'abord par un personnage de roman.*

Noelle Chatelet, à la RTBf en fev. 2007

Auteur de *La femme coquelicot*

Maître de conf en sciences humaines Paris V

The influence of novels again

- *I thought it would probably be the best way to help discover the complexity of the subject (extreme ecologism) and the major importance of the corresponding stakes ... But it is an adventure novel and not a magisterial textbook.*

J-C Rufin in *Le parfum d'Adam* – Flammarion 2007

And all this is particularly true for nuclear emotions

- *There is no other domain where opinion even of educated persons, is so far from facts. There is no other domain where the presentations of experimental results or statistics leads to so much controversy not to say that it is impossible. There is no other domain where passion so clearly overcomes reason.*

• J. de Kersvadoué
in Les Prêcheurs de l'Apocalypse
Plon 2007

Nuclear is present in most James Bond films



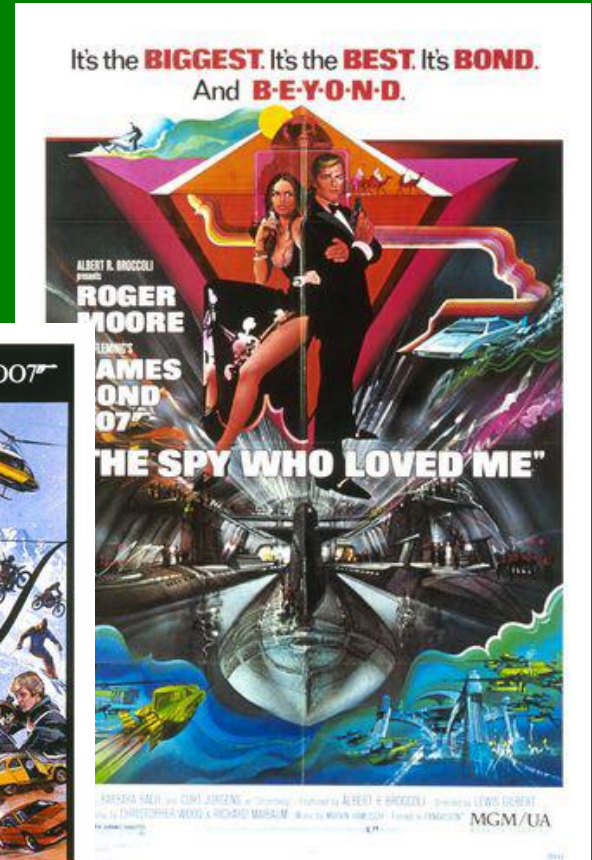
The World Is Not Enough
007™



ALBERT R. BROCCOLI
presents
ROGER MOORE
JAN DE BONT'S
JAMES BOND 007™
in
FOR YOUR EYES ONLY

Starring CAROLE BOGUEET • TOPOL • LYNN-HOLLY JOHNSON • JULIAN GLOVER
Produced by ALBERT R. BROCCOLI • Directed by JOHN GLEN
Screenplay by RICHARD MAIBAUM and MICHAEL G. WILSON • Executive Producer MICHAEL G. WILSON
Music by BILL CORRY • Production Designer PETER LAMONT
Associate Producer TOM PEVSENER
United Artists

Title Song Performed by SHEENA EASTON



It's the **BIGGEST**. It's the **BEST**. It's **BOND**.
And **B-E-Y-O-N-D**.

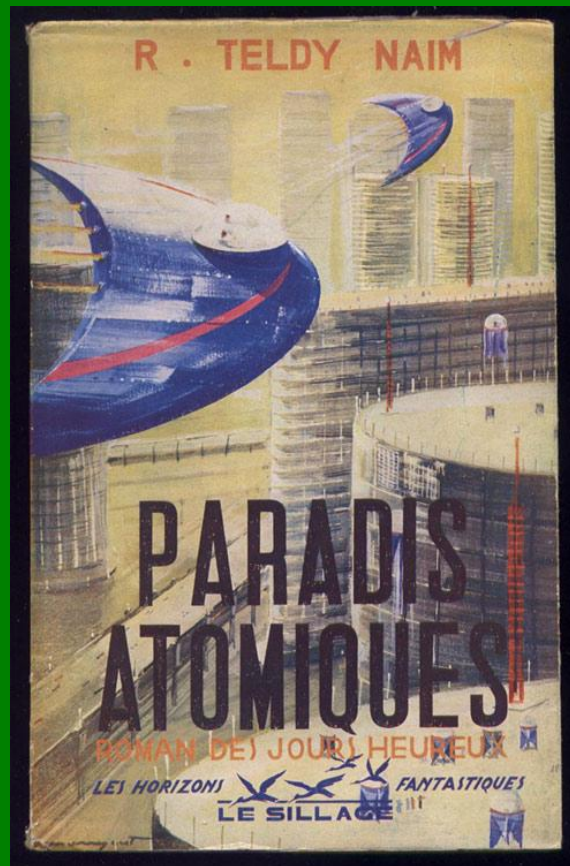
ALBERT R. BROCCOLI
presents
ROGER MOORE

LEANDRO
JAMES BOND 007™

"THE SPY WHO LOVED ME™"

BARBARA HADZI and CARL JUNGERS in Storyline. Produced by ALBERT R. BROCCOLI. Directed by LEWIS GILBERT
Costume Designer CHRISTOPHER WOODS & RICHARD MAIBAUM. Music by MOVA ANDERSON. Lyrics by PANDORA
MGM/UA

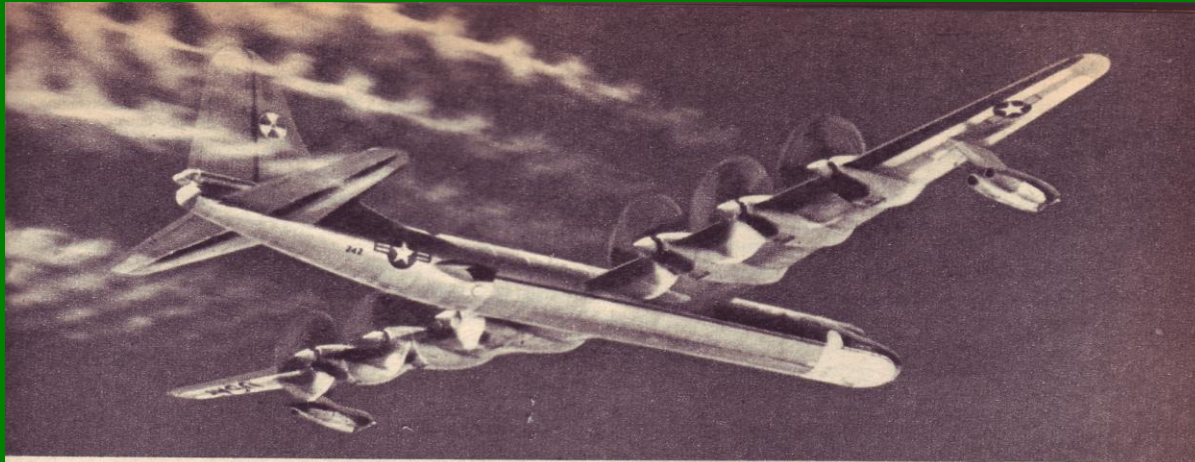
Nuclear energy used to be a positive dream



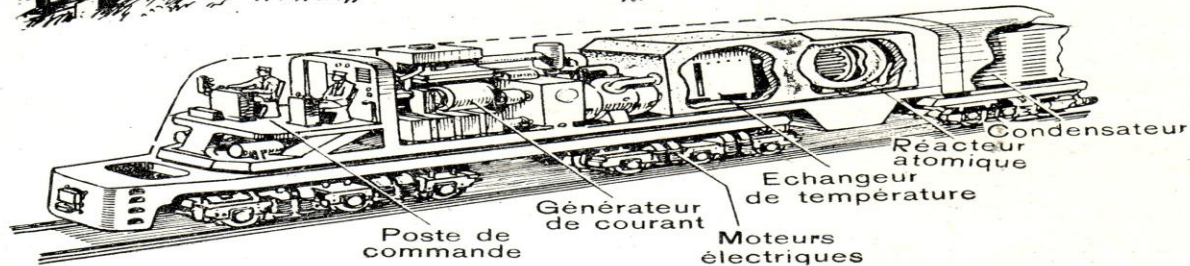
SF in 1949:

Poverty has disappeared with the use of electricity produced by nuclear power plants.

Positive utopia



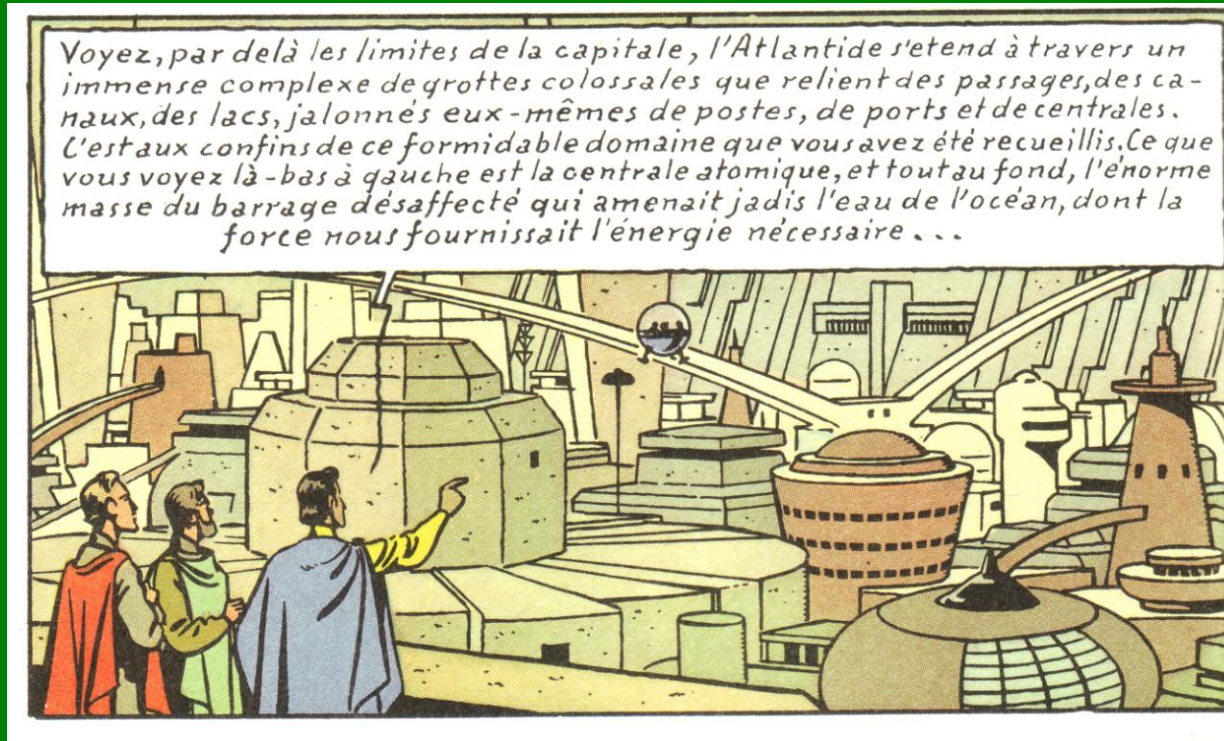
Sur ce B-36, un réacteur a volé pour la première fois en fonctionnement (il ne servait pas à la propulsion) pour étudier son comportement en altitude et l'action de ses rayonnements sur les divers instruments de bord.



Un des schémas possibles de locomotive atomique pour les chemins de fer modernes.

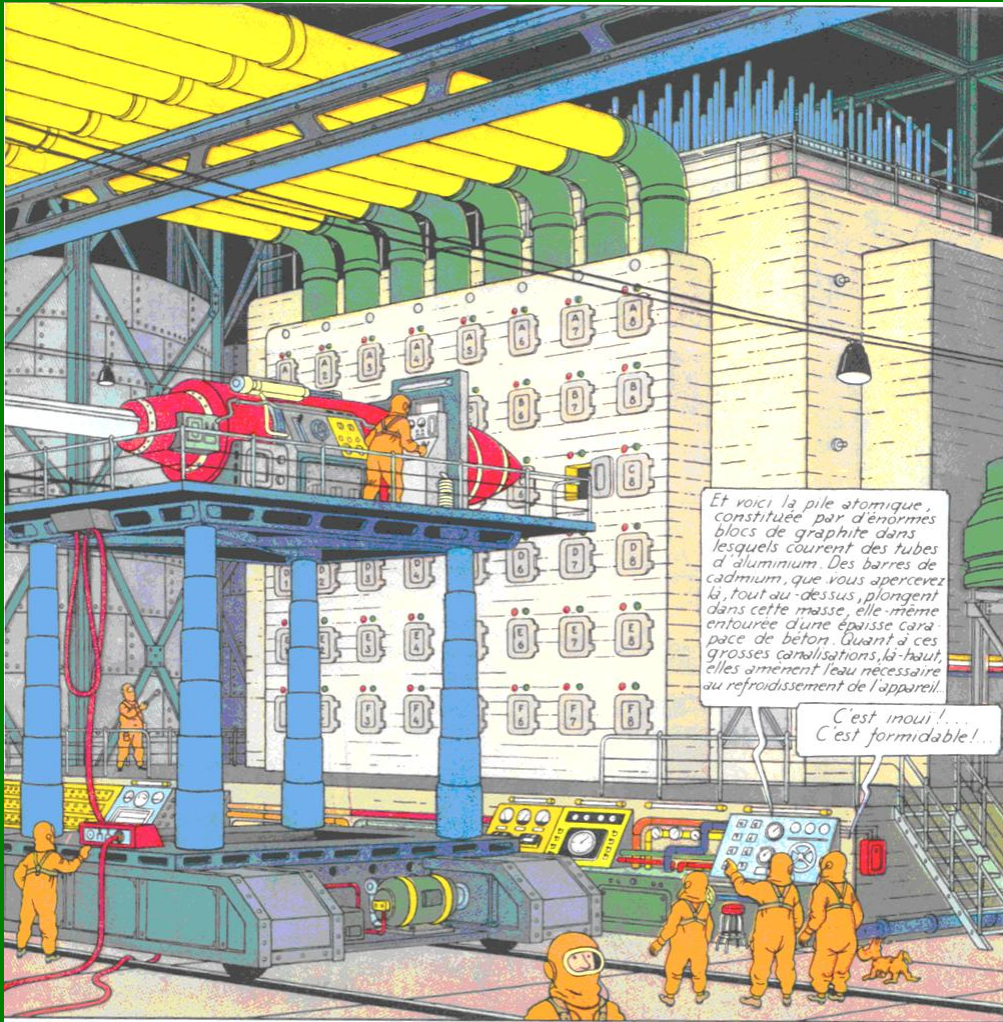
- In popularization books and magazines in the 50s.

Energy for ever



- In *L'énigme de l'Atlantide*, for Edgar P. Jacobs, the basic energy source for the Atlantes is the atom

Hergé dreams



- On the basis of the first reactors, he sees a possibility to fly to the moon

1953

Military knowledge transfer



Efficient « images »:

- *Atoms for peace*
(Eisenhower in 1953-55)
- *They shall beat their swords into ploughshares*
(UNO, taken from the Bible - Isaiah)

A stimulating project

So we started to

- Build power plants mainly on the basis of nuclear reactors build for marine propulsion
- To make fuel from fissile materials and the plants designed to prepare the material for the bomb

Was it a wild dream ?

« Too cheap to be metered » dreamed a US specialist in the 50s. But in the 70s with the expansion of civil applications, doubts surface.



And the scientists dreams turn into nightmares



- The « battle » in Creys-Malville in 1977...
- Plogoff, Nogent,...
- Those are the first steps towards **emocracy**

Let us try to analyze systematically people's anxieties

To make things clearer, we will develop anxieties one after the other and show examples of fiction which are based on them.

But it is evident that in most books or films, the author uses more than one.

Nuclear, an aggressive dragon



- Puppet show, « Le dragon nucléaire »
(Paris **2008**) in the Cité des Sciences de La Villette

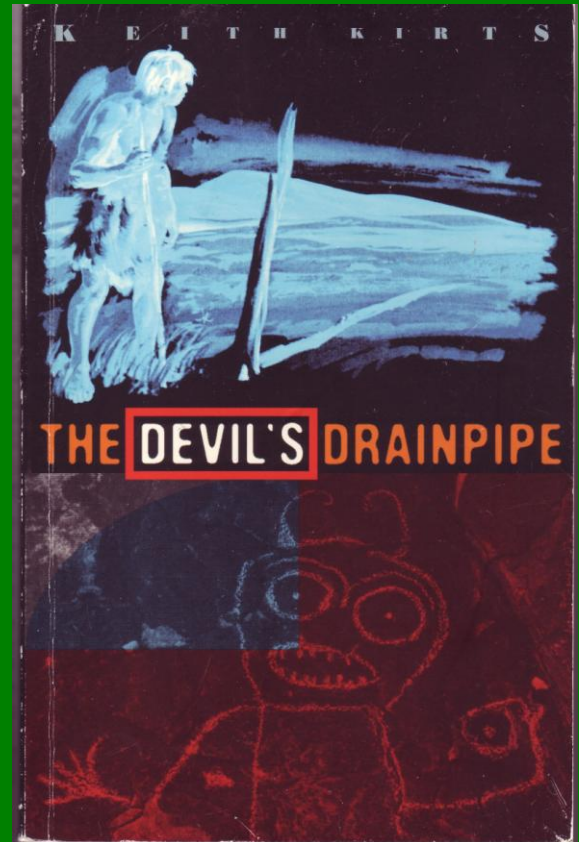
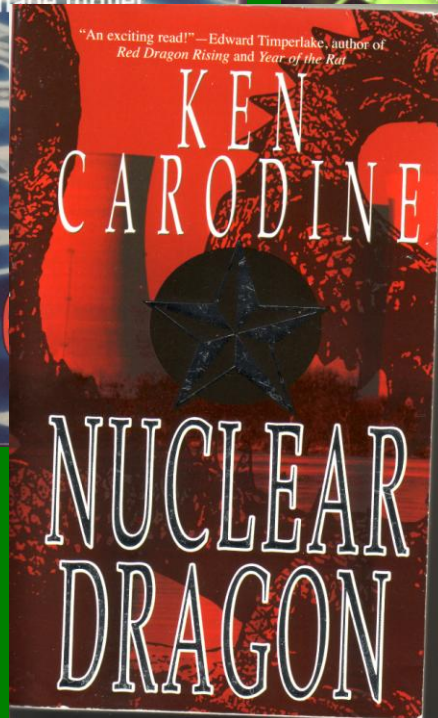
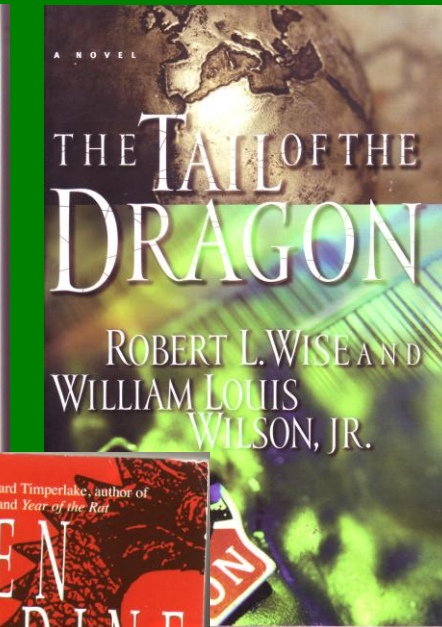
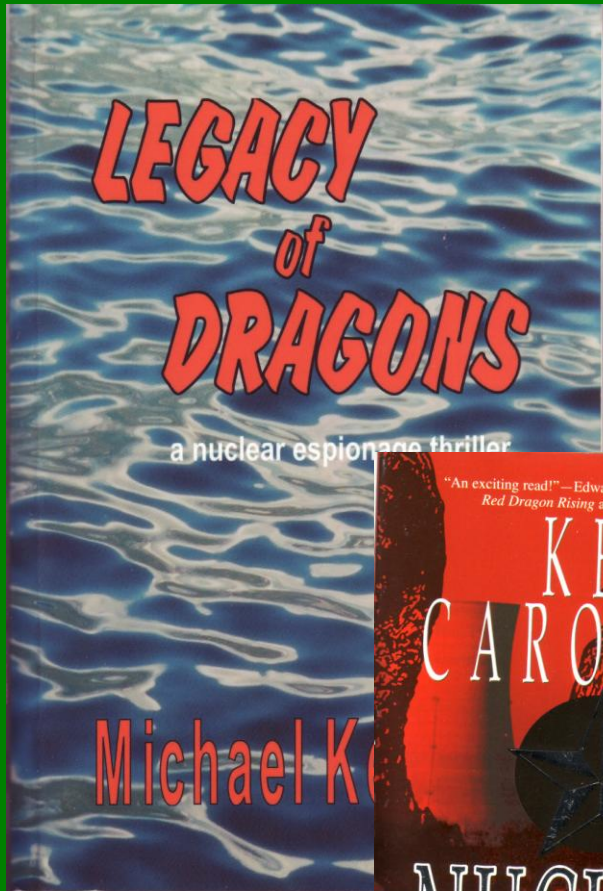
Nuclear scientists contribute to the myths ..



Naming nuclear installations :

- Phénix
- Superphénix
- Dragon
- Fafnir
- Isis et Osiris

Nuclear dragons in books



But the devil as well ...

Thus plutonium ...

After Uranus and Neptune comes Pluto, thus plutonium but ...

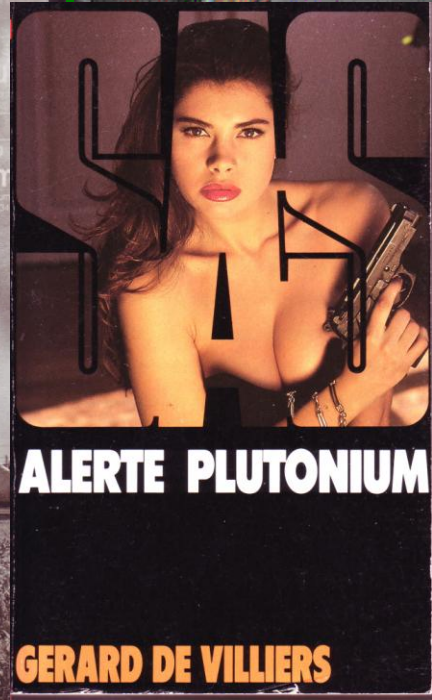
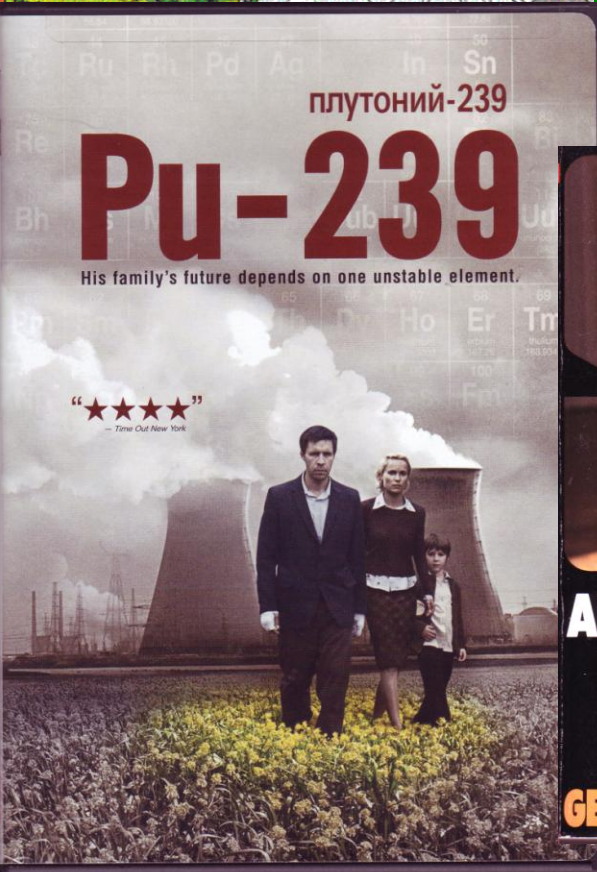
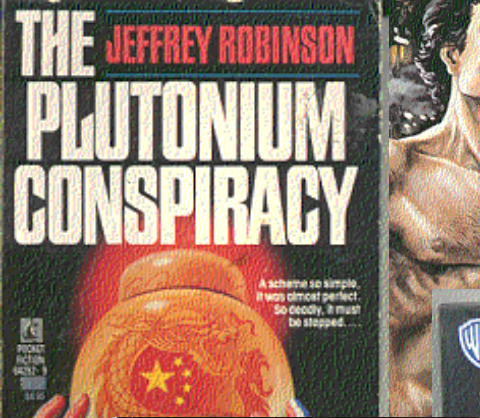
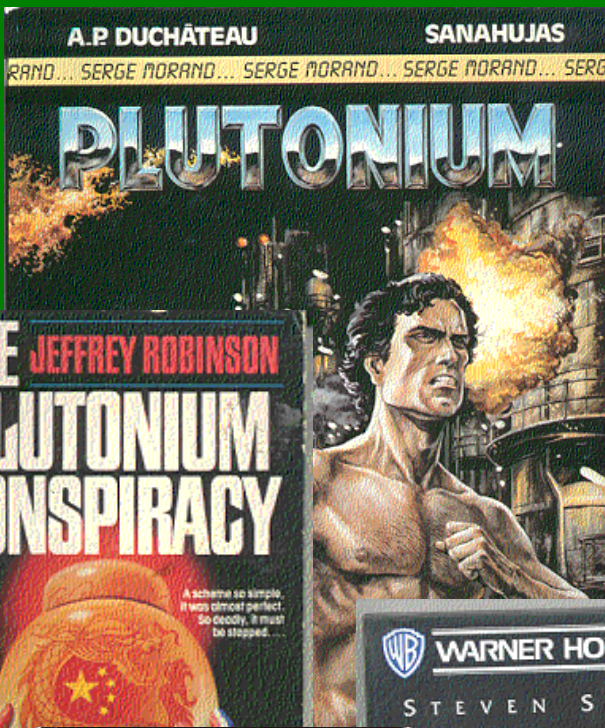
« If there ever was an element that deserved a name associated with hell, it is plutonium ... »

According to a US senator

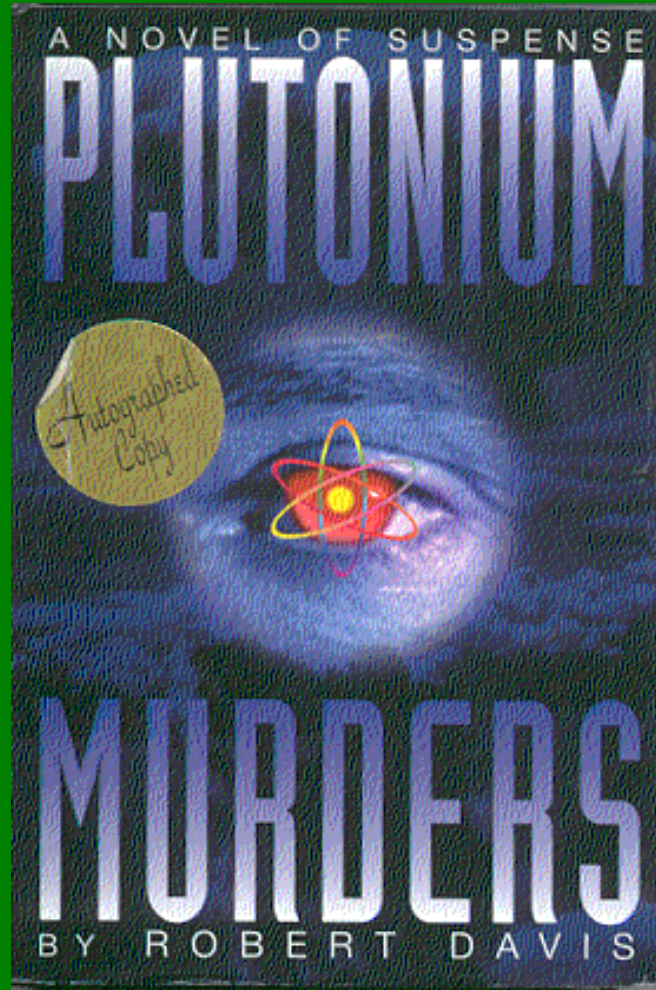
In fact **Pluto, the Rich**, is the latin god of the ground resources, both minerals and plants

Unluckily he is also associated with Hadès, the Greek god of the deads ...

The wrong choice or the wrong mediatisation ?



Anxiety: its toxicity



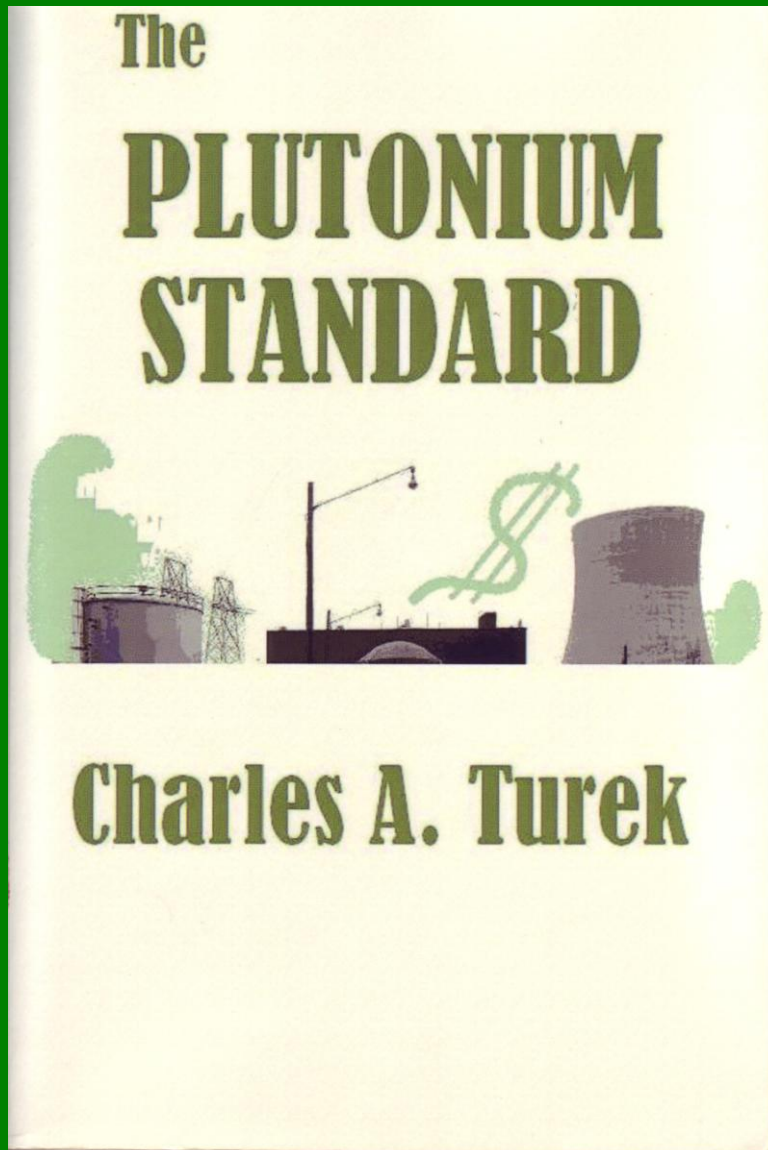
It takes a long time to kill,
it is difficult to disperse,
it is under close
surveillance, etc

But these facts do not
reassure !

MOX means cancer and death



Anxiety: proliferation



- Specially plutonium, an energy resource also considered by most people to be a potential basis of explosives

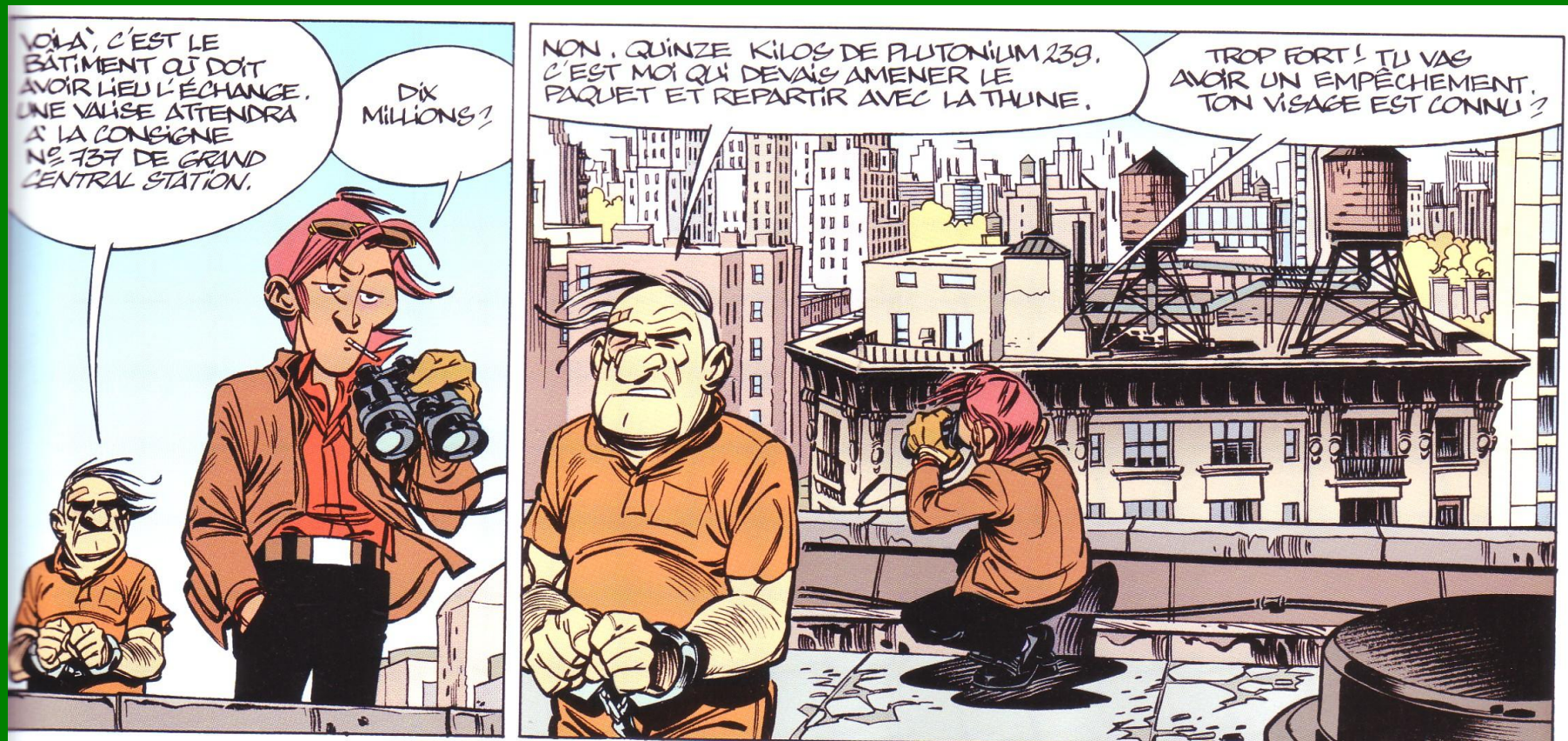
More generally: the anxiety caused by potential proliferation



Thus terrorism by
rogue states or
independant
groups

And direct threats
for large towns or
countries.

Illicit trafficking in comic books



- SODA 11 – Prières et balistique by Tome et Gazzoti

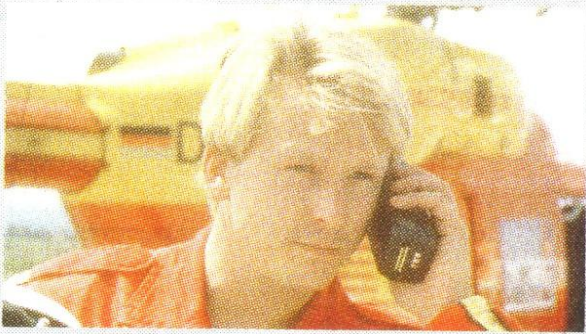
Pirates serving the « bad ones »



Transporting plutonium is supposed to be the highest risk

- 31781657

20.35



Medicopter 117

Menace au plutonium

Série (saison 5, épisode 3) avec Manfred Stücklschwaiger (Pilote Thomas Wächter), Rainer Grenkowitz (Dr. Michael Lüdwitz), Anja Freese (Dr. Gabrielle Kollmann), Serge Falck (Assistant Peter Berger).

► **Un maître chanteur sans scrupules contacte le département de police et exige vingt millions d'euros en diamants. Si ses désirs ne sont pas exaucés, il menace de faire sauter une bombe au plutonium dans la ville. L'individu exige en outre que ce soit l'équipe de Medicopter qui lui remette la rançon.** - 37930947

Prime time on Sunday

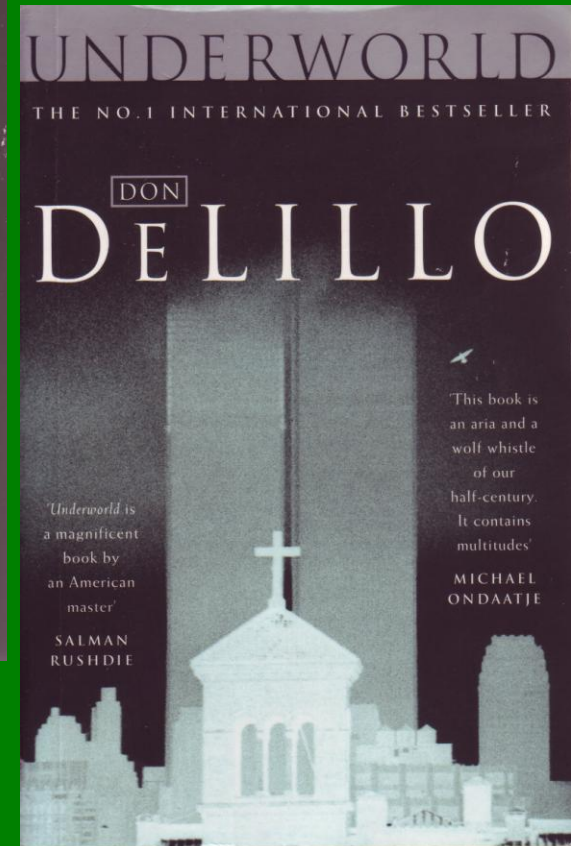
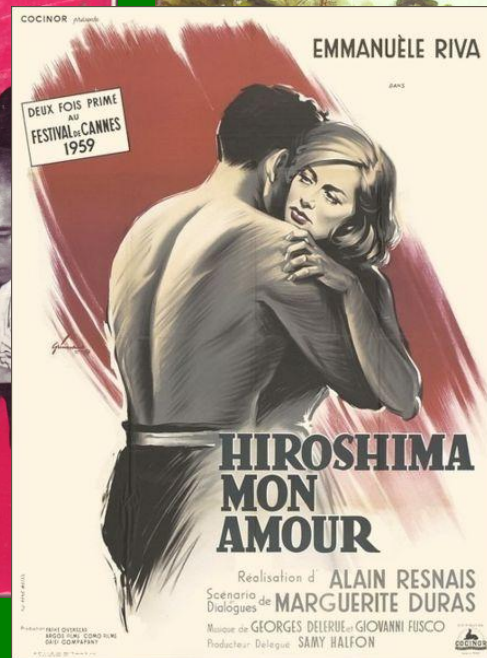
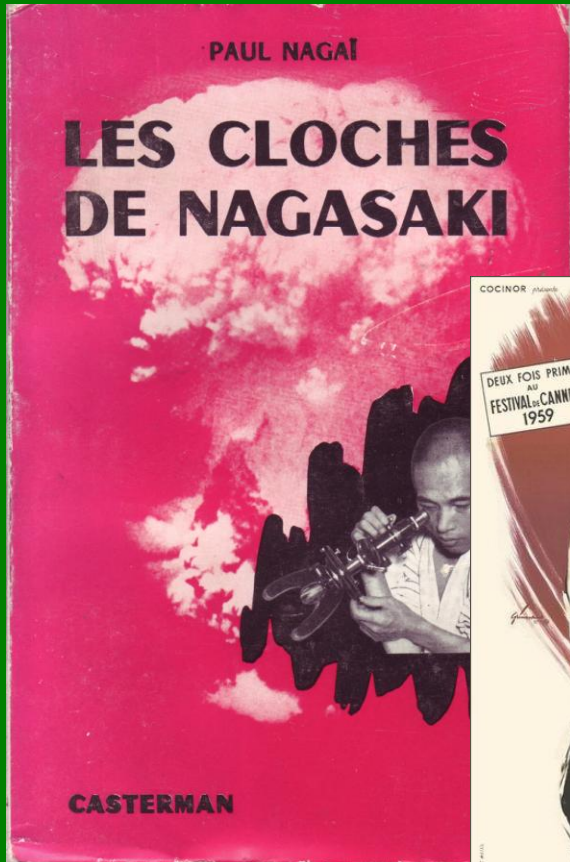
- 12 April 2009:
Club RTL presents again
this TV austrian serie,
already shown years ago.

Is the frequency of
antinuclear films on RTL
part of a campaign ?

Fissile material = the bomb ...

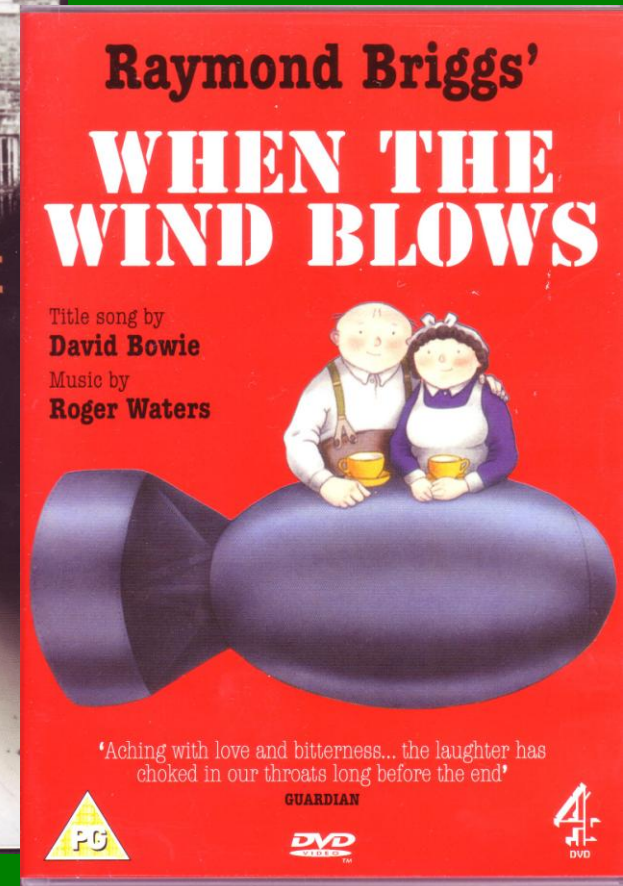
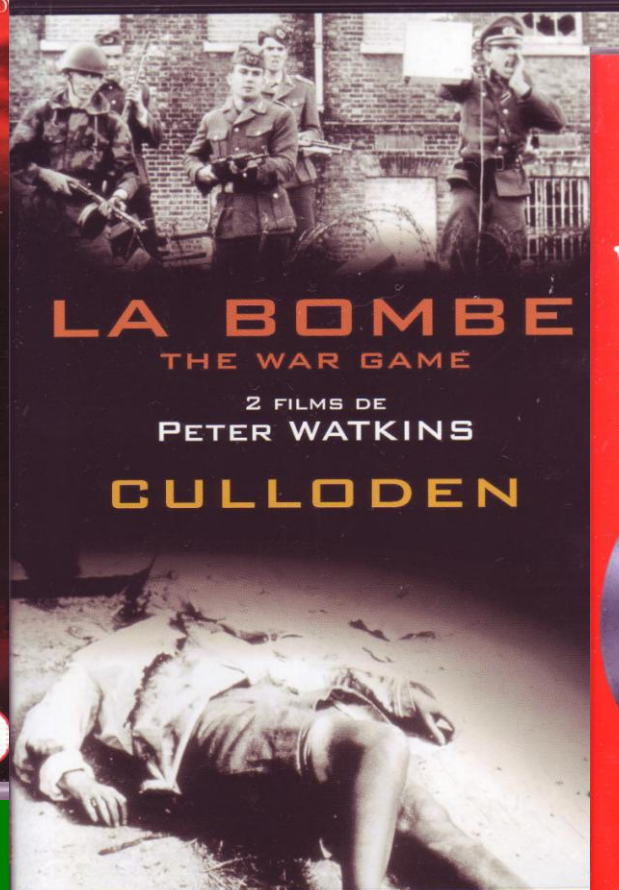
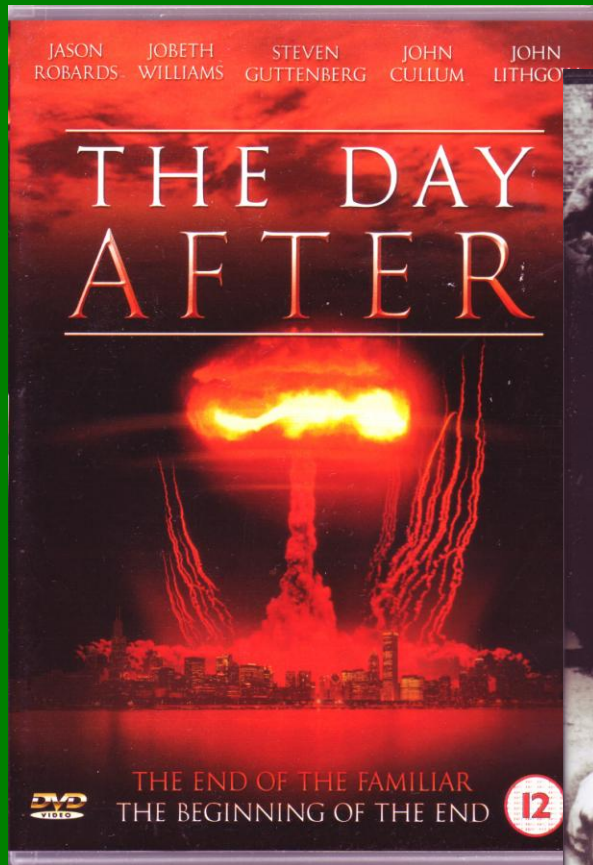


Facts have been described



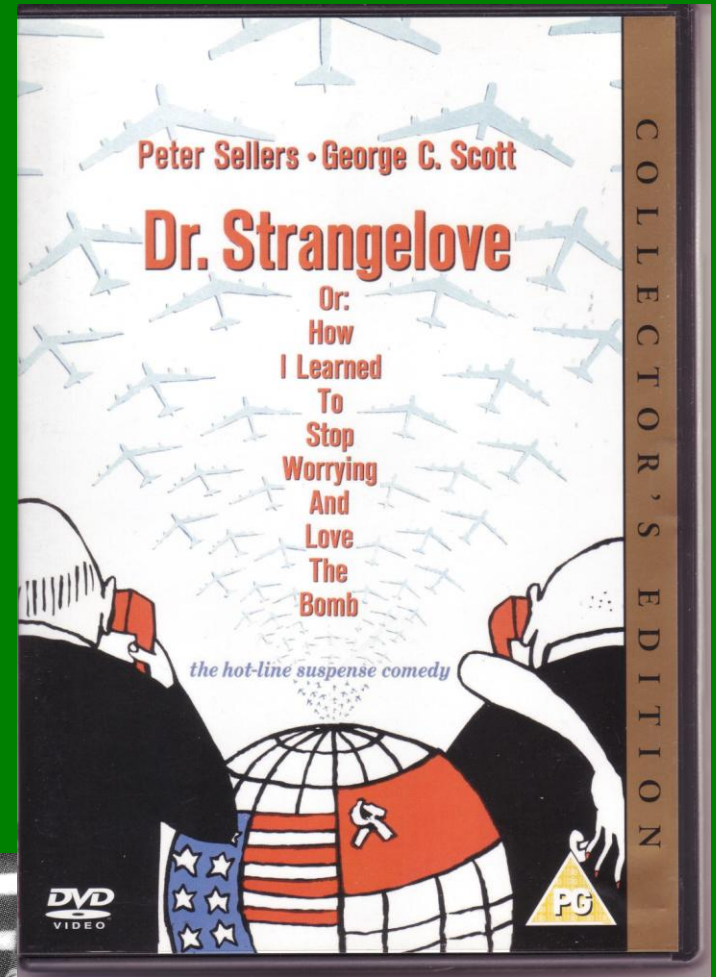
Either as narratives or novels, from Hiroshima to the Cold War

Some are realistic films on the consequences

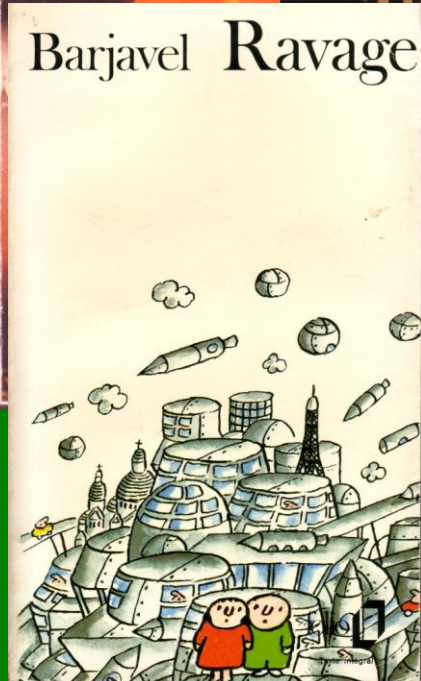
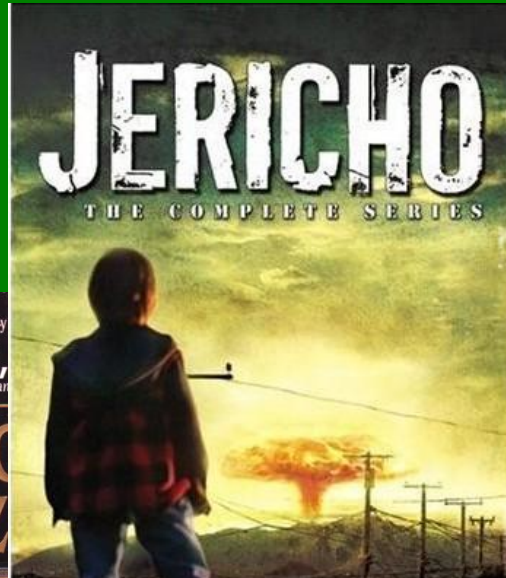
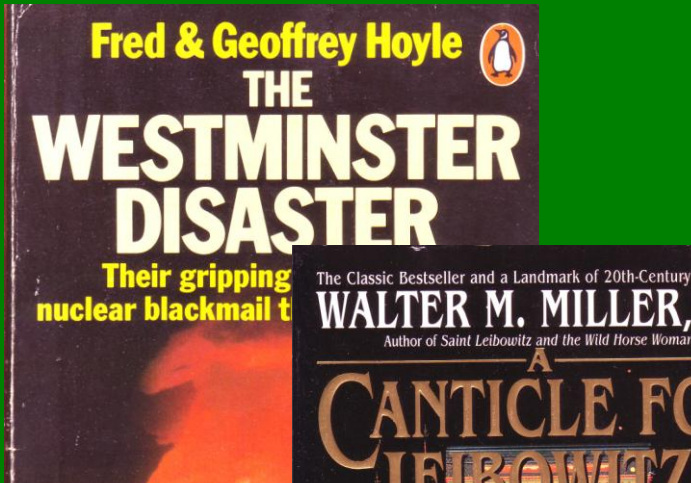


Others are fiction
but also scaring

Stanley Kubrick's film is still
remembered (1963)



Is Apocalypse inevitable ?

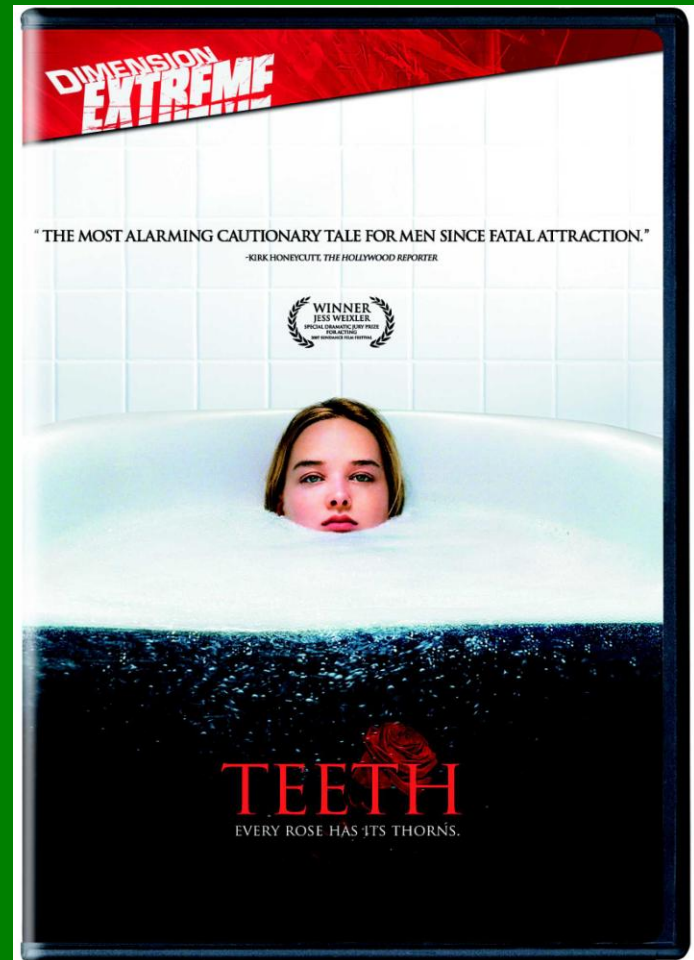


Anxiety: radioactivity



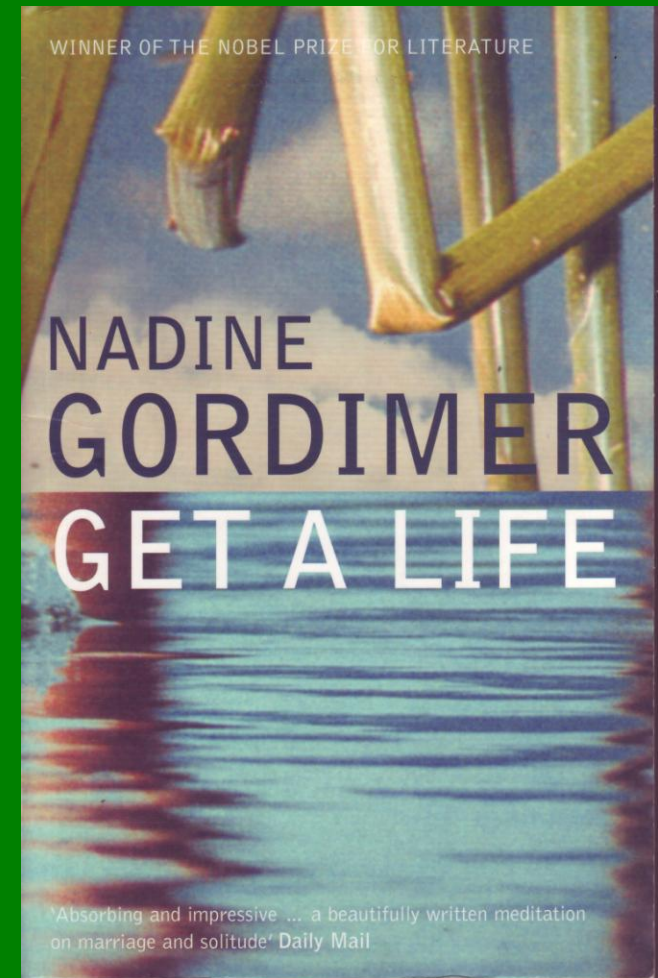
- Mysterious
- Uncertain
- Complex to understand

The most frightening nightmares

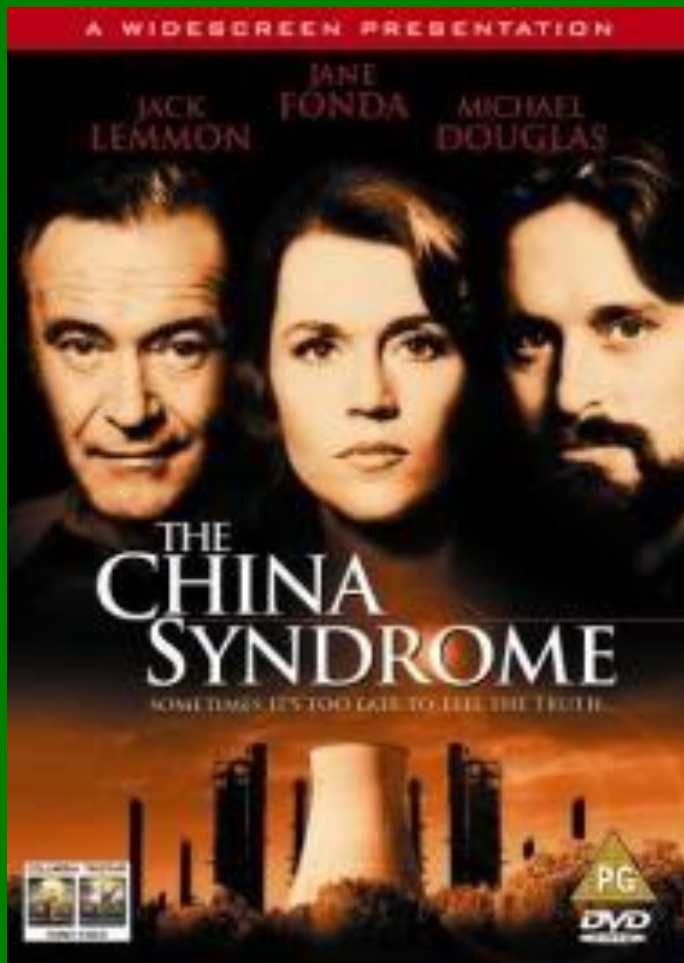


Since the beginning (1954) but still today (2008)

But also realistic novels of well-known authors



Anxiety: the safety of power plants



First presented 12 days
before TMI accident
in 1979



TMI accident consequences

- Communications fail amid chaos
- Public panic and unnecessary evacuation
- The unit never operated again

- A legacy of public scepticism still now.
Recently interviewed, 3 out of 4 still remember it « as a big deal »

Accidents and evacuation still scare in 2008

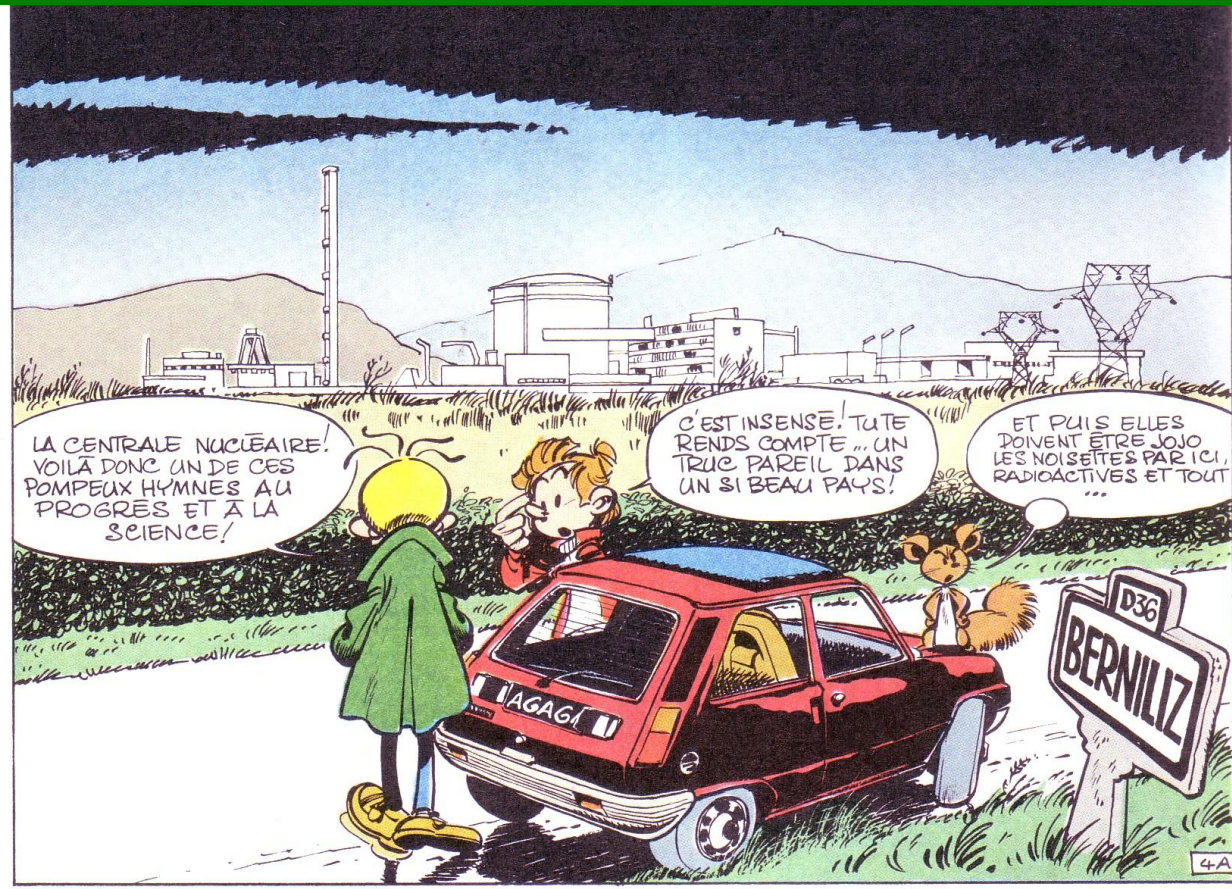


- « Ineluctable » on Arte: accident following unexpected test required by Indian client

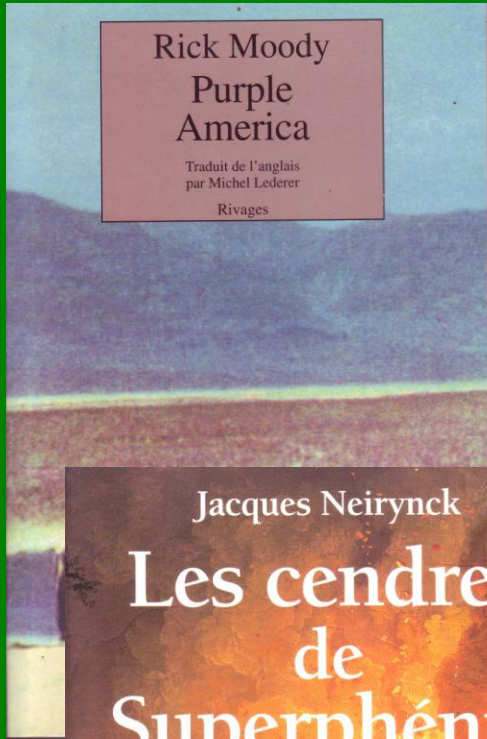


- « Der Erste Tag » on ORF: accident in Czechia requires evacuation in Austria

Scepticism is reflected even in « BD »

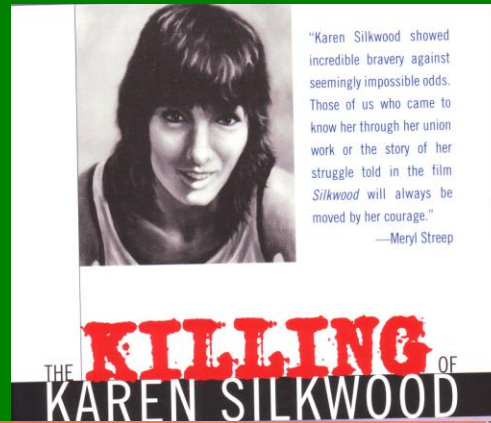


L'Ankou – Spirou et Fantasio – par Fournier



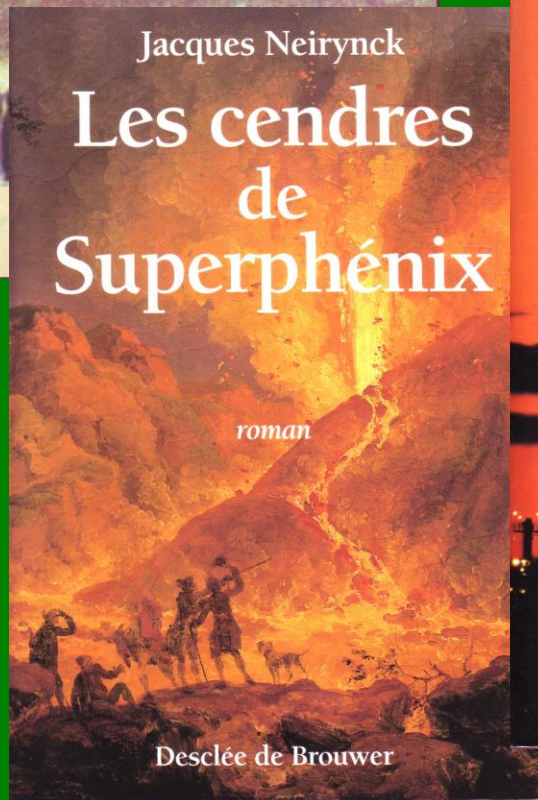
Rick Moody
**Purple
America**

Traduit de l'anglais
par Michel Lederer
Rivages



"Karen Silkwood showed
incredible bravery against
seemingly impossible odds.
Those of us who came to
know her through her union
work or the story of her
struggle told in the film
Silkwood will always be
moved by her courage."
—Meryl Streep

THE **KILLING** OF
KAREN SILKWOOD

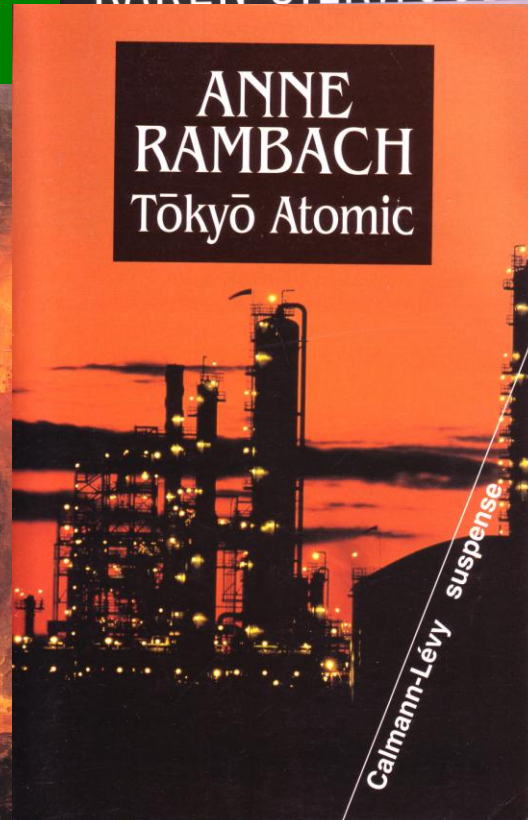


Jacques Neiryck

**Les cendres
de
Superphénix**

roman

Desclée de Brouwer



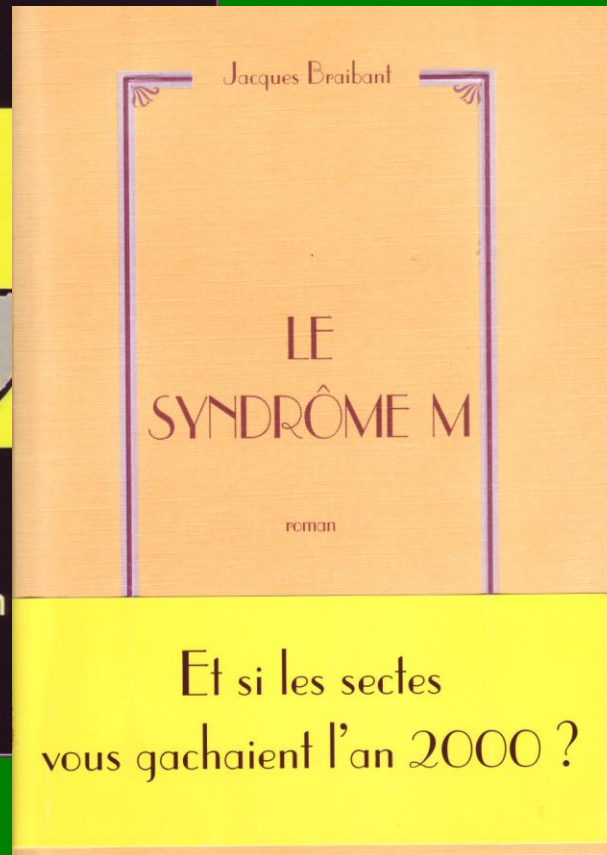
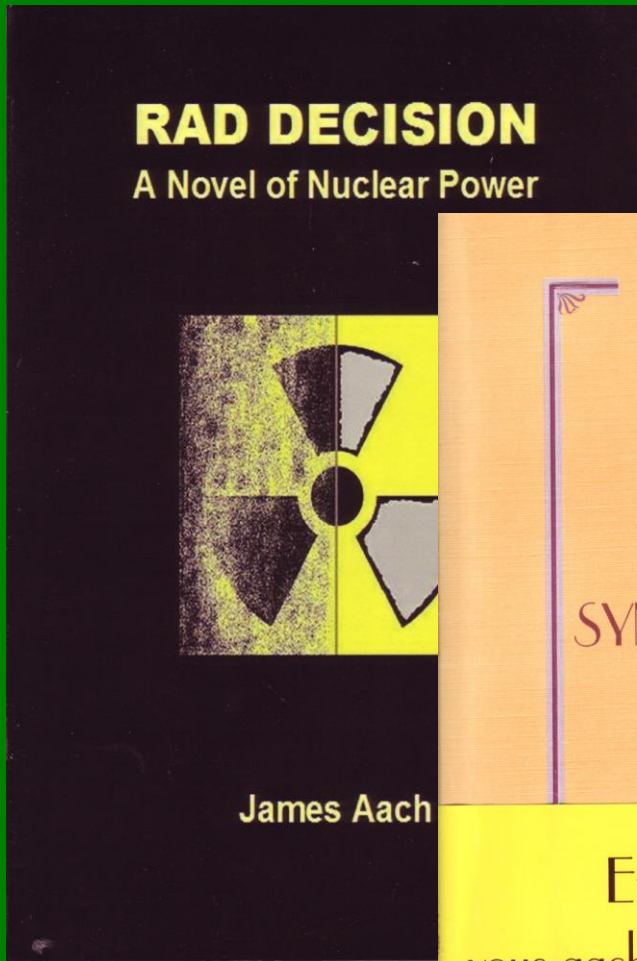
ANNE
RAMBACH
Tōkyō Atomic

Calmann-Lévy suspense

Lack of confidence

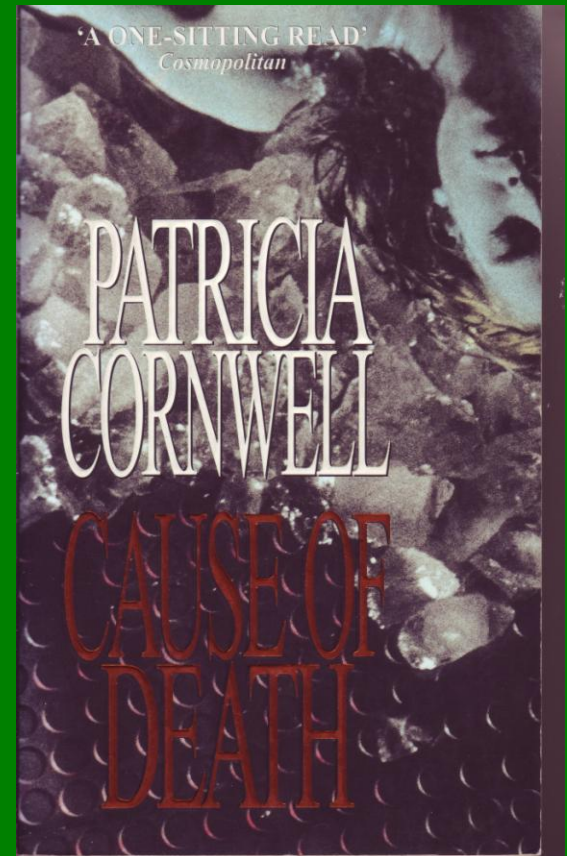
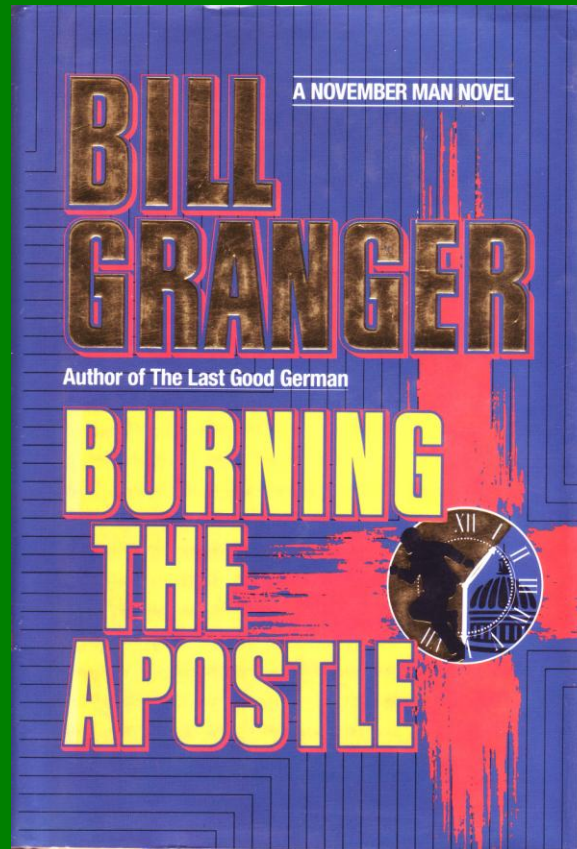
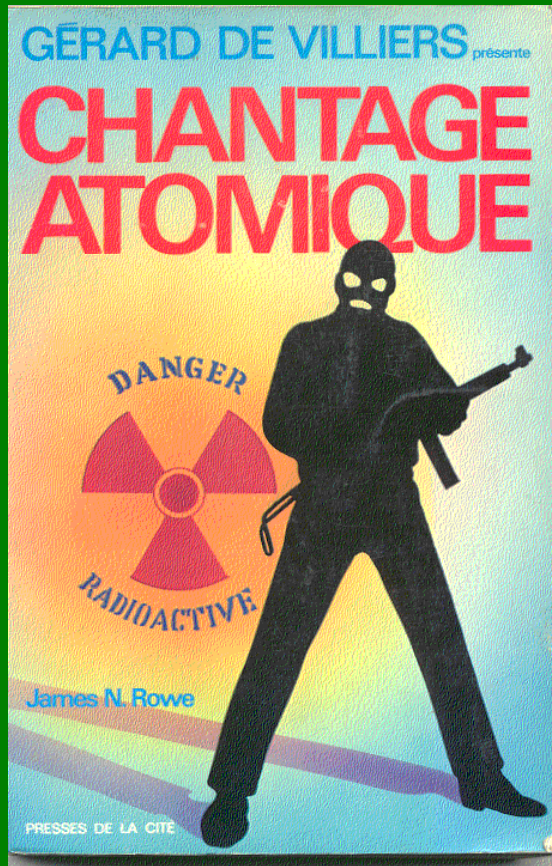
- Blunders or carelessness lead to accidents and contaminations in many novels

Internal sabotage



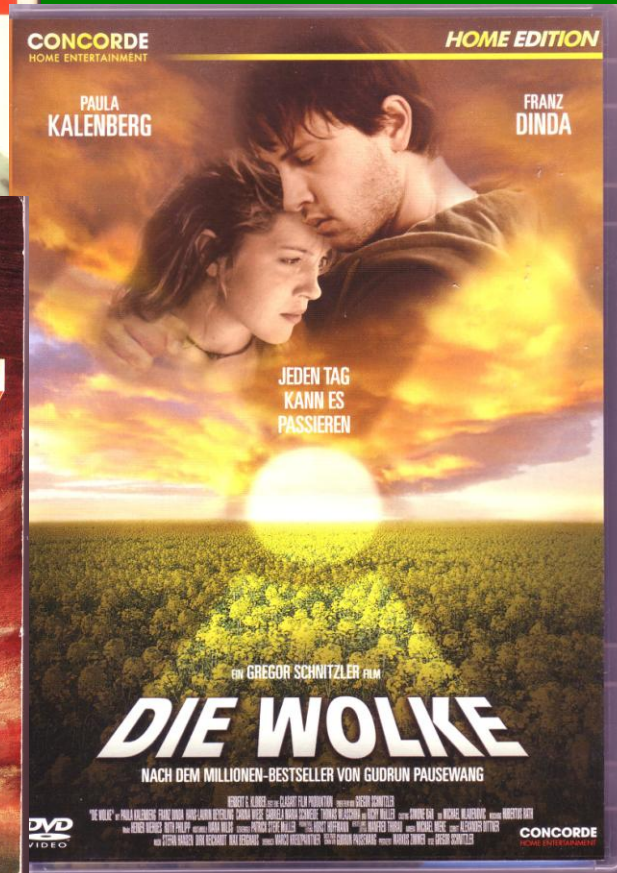
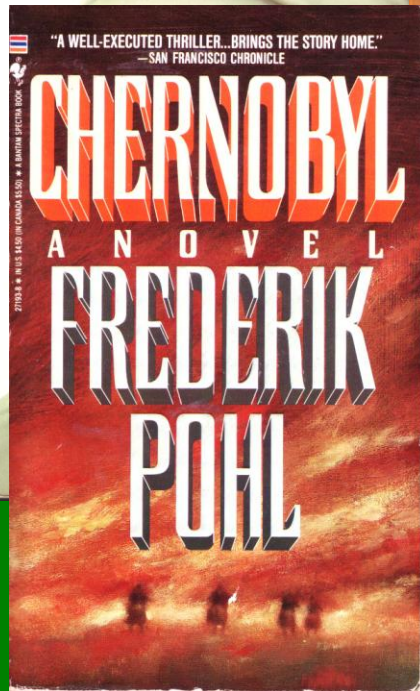
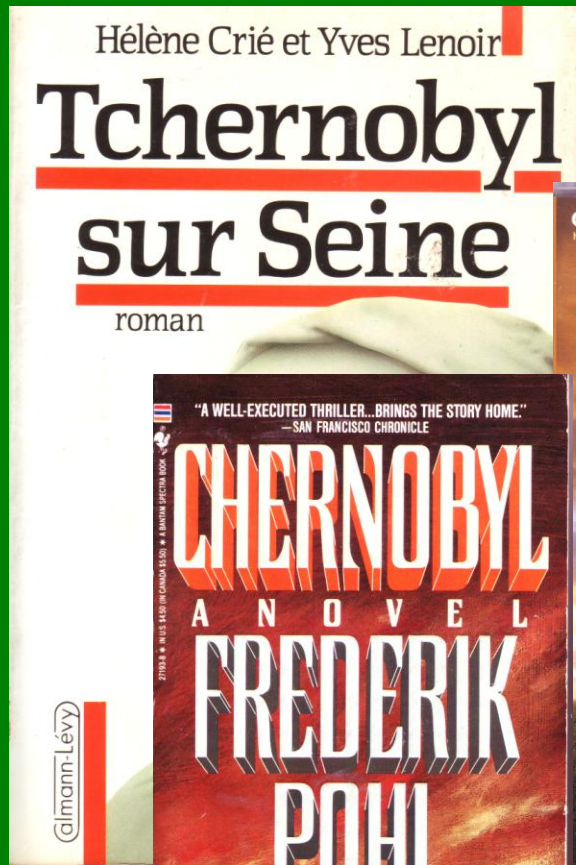
A local technician is blackmailed or even is a member of a terrorist group and tries to destroy the plant, but luckily most fail

External attacks: terrorism



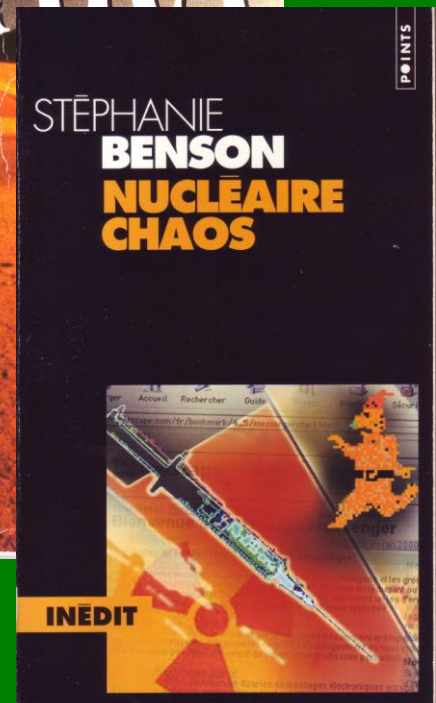
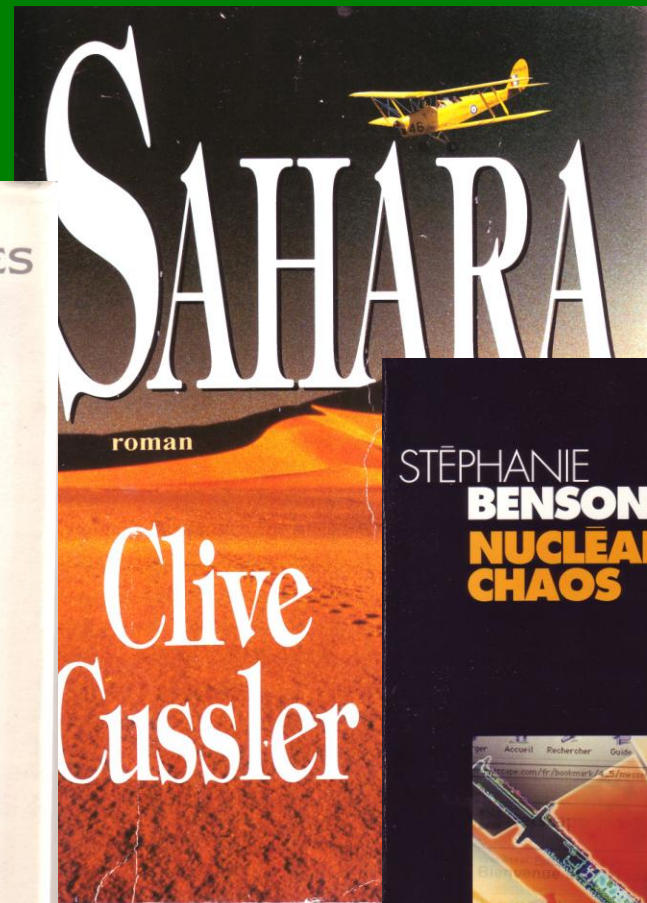
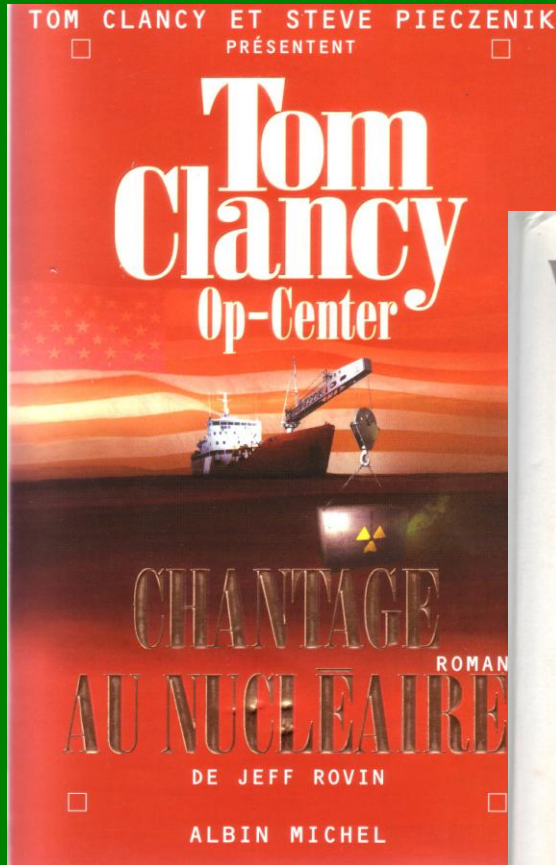
- A frequently used theme of thrillers which apparently never happened in reality until now

This major accident is kept alive in all memories



Revived at each anniversary in the news but also used by novelists to scare people about imaginary accidents in existing european reactors (here Nogent and Grafenrheinfeld)

A major anxiety: wastes storage



And a final cause of anxiety:
experts do not tell the truth ...

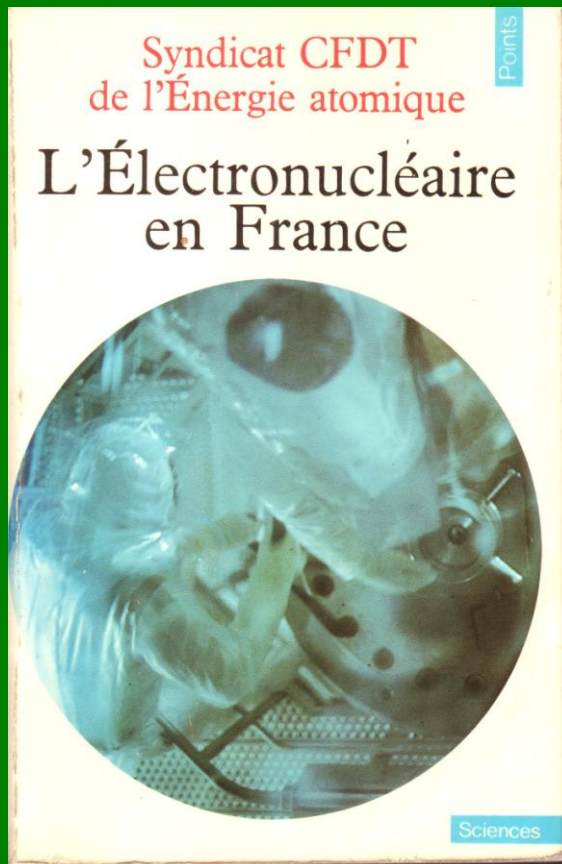


Unluckily most of the dominant images come from opponents

« ... waste, military applications and accidents tend to catch the attention of public opinion and dominate the image of the sector, as they are the only occasions when the industry makes the headlines. »

Luc Olyslager in a PIME paper 2004

Technical information is not sufficient to convince

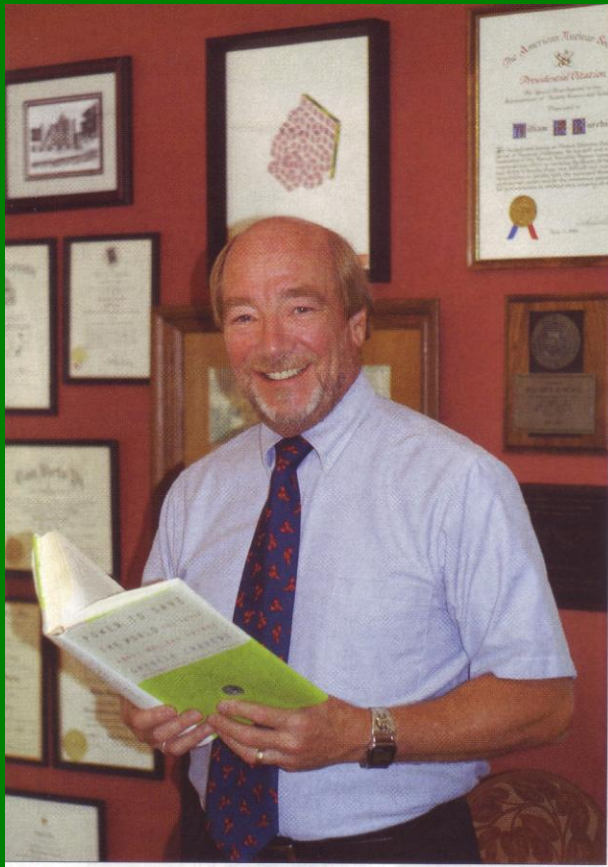


Books are either :

- Too « glorious »
- Too technical
- Simplistic

And are probably read only by those already convinced ...

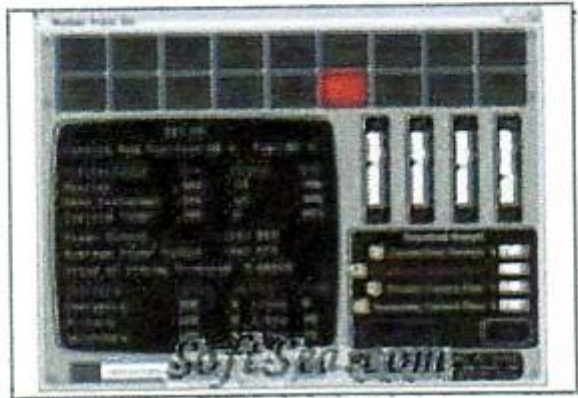
Non nuclear writers popularize better than we do



- After a few years of nuclear site visits, the novelist and ex-anti Gwyneth Cravens writes:
« Power to save the world »
(2007)
And travels around the USA, presenting positive talks

Would videogames help ?

Nuclear Power Plant Simulator



Rating: ★★★★★

Version: 1.1

Publisher: store.esellerate.net

File Size: 2.5 MB

Date: Oct 13, 2005

Price: \$8.95

License: Demo

Directory:

Strategy Games

Games

« Your object is to produce as much electricity as you can ...

It is a lot of fun to see how hard you can push the machinery without causing a problem. »

As we live in « emocracy »,
we should use emotions to seduce

« Only a fringe – uncertain, indecisive – of society is accessible to the truth, thus to debate ».

Bernard-Henry Levy

« It is impossible to engage in a rational dialogue with a person about beliefs and concepts that were not acquired by the way of reason »

Carlos Ruiz Zafon

An « information source », according to some fans ...

*Although it sacrifices
technical correctness in
favour of humour, it has
entailed a sustained
presence of Nuclear Energy
in television, in millions of
homes, generating an
unprecedented
familiarization with this type
of energy source.*

Jovenes Nucleares (Spain 2008)



Targeting hearts and guts

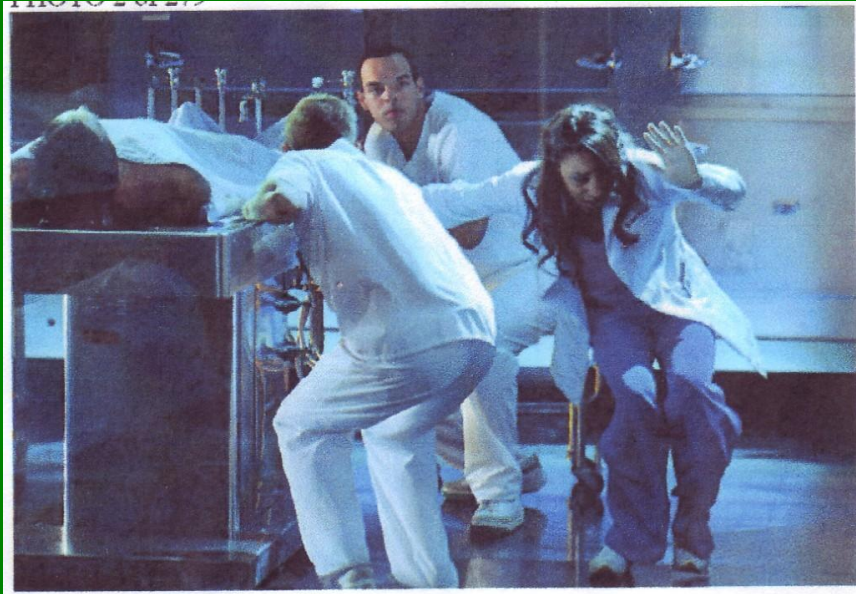


« You can pound them with facts all you want. They're just going to clamp their hands over their ears until you figure out a more indirect pathway to their brains »

If our stories « can create an atmosphere of fun, there are no limits on popularity »

Randy Olson

Reach the public through its most common entertainment



Prime time TV series like *CSI* or *Une femme d'honneur* improve the police image: people see that they are humans like everyone

20.55

UNE FEMME D'HONNEUR *T

Téléfilm de Michaël Perrotta (2004, France)
Avec Corinne Touzet (Isabelle), Marie Lenoir (Cécile),
Fabrice Eberhard (Sébastien), Gisele Casadesus (Marthe),
Franck Capillery (François), Pierre-Marie Escourrou (Pierre)

LES LIENS DU SANG

A scene from the TV show 'Une femme d'honneur' showing a woman and a man in uniform, possibly police or gendarmes, in an outdoor setting. The woman is looking at the man, who is holding a walkie-talkie.

*Etre femme d'honneur s'avère parfois compliqué !
(Corinne Touzet et Franck Capillery)*

Un matin, Nathalie et Vincent sont retrouvés assassinés à leur domicile. Dans la chambre de ce couple de notables, se trouve un coffre vide. Dans la pièce voisine, dort leur bébé de 8 mois miraculeusement indemne. Isabelle Florent et ses gendarmes optent tout d'abord pour l'hypothèse d'une crime crapuleux.

Qu'en penser ?

Il s'agit déjà du trentième épisode de cette série qui met en vedette les forces de l'ordre avec un souci du réalisme allant jusqu'à ce que de vrais gendarmes jouent les figurants. Ceci dit, ce n'est pas tous les jours qu'on risque de recevoir un PV par une femme filc aussi charmante que Corinne Touzet. **AA** -2402138-

A nuclear TV series must be fun !

Present project:

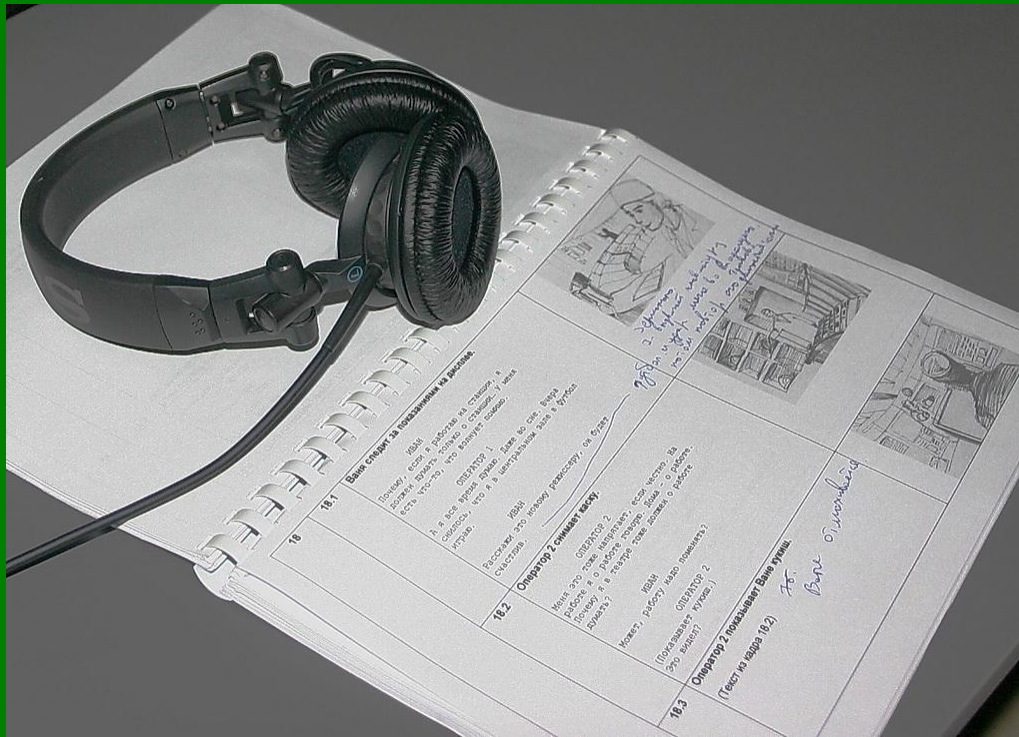
A film crew wants to create a fiction around the nuclear plant and the life of its workers and neighbours, starring well-known actors.

Their interactions creates the opportunity to show the realities of nuclear activities.

The audience will identify with the friendly nuclear characters.



Rosatom supports filming a positive fiction in their NPP !



- « Indivisible » will tell about the work in nuclear industry : it will be a romantic comedy.

Shooting in the nuclear facilities



Action in SELA-2, a
simulator training
facility near
Leningrad NPP

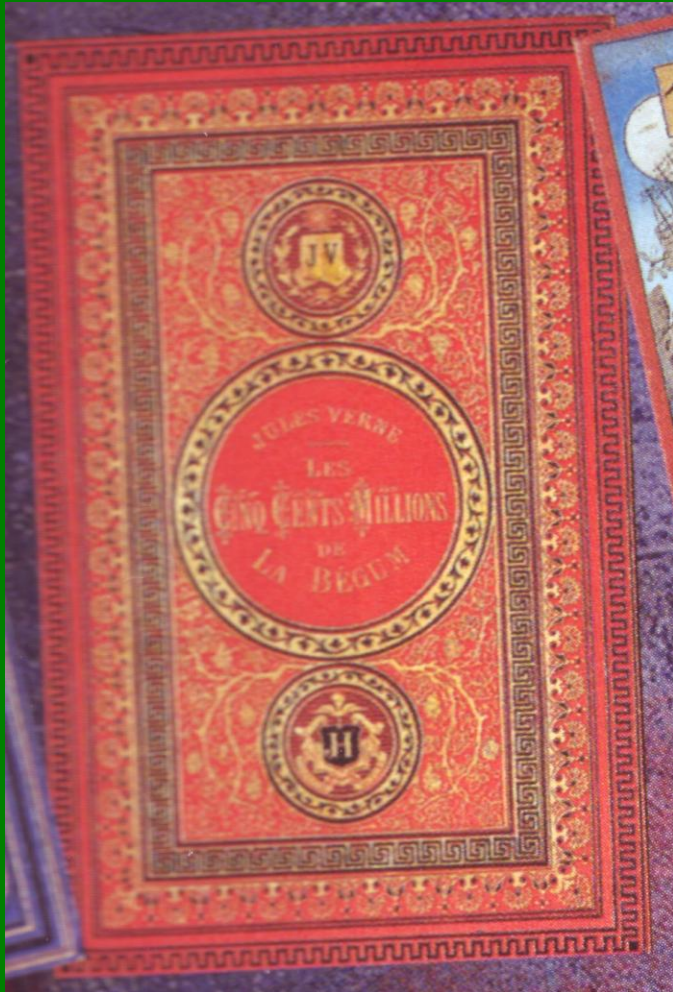
Participate in popular films ?



- « The movie gives us an opportunity to show how exciting the reality of antimatter research is »

Sergio Bertolucci
CERN Research Director

Probably lacking today



« Today, to invigorate the interface between science and society, we lack a Jules Verne. The contemporary anxieties about the rational and corresponding technologies result partly from this lack.»

Michel Serres (Préface de Jules Verne, *De la science à l'imaginaire*)

Dreams are needed to be creative



« To demonstrate the importance of new technologies in the sustainable development but also to bring back dreams and emotions at the heart of the scientific undertakings »

Project Solar Impulse
of Bertrand Piccard

Is there a new evolution of the
nuclear « mindset » ?

**« It's time to put passion
and emotion in what we have
to do »**

Nils Diaz, former NRC* chairman

USA Nuclear Regulatory Commission

Thank you

I hope this presentation
will raise many comments
and questions ...