

RISK MANAGEMENT FOR BLACK SWAN RISKS: PLANNING FOR NUCLEAR CATASTROPHE, FRACKING PROBLEMS, AND OTHER ENVIRONMENTAL DISASTERS

Jeffrey M. Pollock

The purpose of this article is to assist counsel in planning for and responding to the increasing risk of catastrophic loss. Traditionally, risk management fell within corporate accounting or financial departments and only indirectly required input from corporate counsel. The days of relegating risk management to an outside broker or to the financial department are numbered as today's risk management involves complex legal concepts, cuts across corporate departments, and particularly for catastrophic loss requires detailed knowledge of New York insurance law. Both the magnitude and frequency of catastrophic risks are increasing. This article addresses in order: (1) planning for a catastrophic event, including an overview of risk; (2) a discussion of the various forms of insurance coverages, indemnity agreements, and other risk management tools that respond to those risks; and (3) a checklist of immediate action items that a company experiencing catastrophic loss must immediately implement even while in the midst of the disaster.

Worldwide, the number of environmental disasters is staggering. Looked at another way, in 2007, in excess of 21,500 people died due to 355 natural and man-made disasters. Property damage claims worldwide were in excess of \$70 billion, and only one-third was insured. Of the insured amount, \$23.3 billion of damage was natural catastrophes and the remaining \$4.5 billion were due to major man-made disasters. *Id.* at 6 (2008). The risk in Fukushima risk from the tsunami and earthquake is over \$265 billion as a result of the over 15,500 dead and 7,300 missing. From environmental exposures such as storm damage, typhoons, earthquakes, and nuclear risk, the array of potential direct and indirect harms is far more pervasive and real than we would like to believe. As noted in Adam Piore, *Planning for the Black Swan*, *Sci. Am.*, June 2011, the "list of potential black swan

threats is damningly diverse. Nuclear reactors and their spent-fuel pools are targets for terrorists. . . . Reactors may be situated downstream from dams that, should they ever burst, could unleash biblical-level floods. Some reactors are located close to earthquake faults or shorelines exposed to tsunamis or hurricane storm surges." Is it sensible to plan for the anomalous catastrophic event? Yes. Both the scope and frequency of catastrophes, natural as well as technological, are increasing rapidly. Veronique Bruggerman, *Catastrophic Risks and First-Party Insurance*, 15 *CONN. INS. L.J.* 1, 2–3 (2008). Catastrophic losses increasingly arise every day: cyberattacks, greenhouse gases, global warming (flooding, storms), and of course man-made risks like fracking and nuclear contamination. Planning is essential not only because of the potential impact of catastrophic events, but also because first-party insurance has not been well developed to address catastrophic loss. *Id.* at 9. Insurance is also becoming a more expensive and difficult item to obtain for many risks. For the last five years, manufacturers have enjoyed in general a soft market, a market in which insurance is relatively cheap compared to risk and to historic values. The strong betting is that a hard market is upon us and planning is going to become increasingly critical not only due to the increase in black swan catastrophic events but also due to the hardening market.

I. Planning for a Catastrophe

A catastrophic risk is sometimes referred to as a black swan, an anomalous infrequent statistical event. Traditional risk management tools are adequate for routine risks such as labor, fire, fleet coverage (auto), and flooding. Because these risks are widespread and numerous, insurance brokers and insurers are able to capably predict what coverage will be appropriate given the risk. Black swan events are different. *Id.* at 28. As a species we routinely underestimate risk. Even the most prudent companies are routinely poor predictors of how bad a "bad day" can be. One theory behind our persistent failure to adequately perceive risk is the "gambler's fallacy." The gambler's fallacy shows that people have a very poor concept of randomness and assume that if a bad flood occurred in one year, than it is all the more likely that such a bad flood will

not occur the following year. (Presumably, the argument would be that the bad event, which is unlikely, has already occurred and therefore will not likely occur immediately again.) Another problem here is purely psychological because experimentation shows that many people would prefer the uncertainty of a possible loss rather than the certainty of the premium cost for insurance to pay against that loss now. Even engineers, whom many companies rely upon for rock hard numbers, admit that they are poor predictors of low frequency events. *Planning for the Black Swan* at 53. Corporations suffer from the same poor predictive tendencies that we endure as individuals. It is widely believed that the basis for our inability to predict risk is premised upon a combination of (1) overconfidence, (2) excess optimism, (3) the “halo effect” (namely that we don’t believe bad things will happen to good people, that likeable people are better employees, etc.), (4) anchoring (that previous experience is a solid basis for future predictions), (5) motivational bias (we tend to believe that which is consistent with what will help us), (6) base-rate bias (we tend to ignore factors inconsistent with what we think the answer should be), and (7) small-sample/inexperience bias (we are worst at predicting when experience is low). Corporate culture typically requires an optimistic view regarding the legitimacy of leadership and of the business model; hence there is a built-in bias against identifying risk because that risk’s presence indicates a potential failure or weakness in the corporation. Our ability to anticipate collateral risks is even poorer than our ability to calculate risk.

A. First- and Third-Party Coverages

Fracking and nuclear failures, like that in Fukushima, pose both first-party and third-party risks to the insured. First-party coverage insures the purchaser for risks to them. Life insurance is first-party coverage, for example, and insures the insured in the event of death. Fire insurance insures the building owner in the event of a fire. Environmental risks are both first- and third-party coverages. Flood insurance is a form of first-party coverage. Business Interruption, which is a line of coverage that every business should own and understand, is another form of first-party coverage because it protects the business from financial loss. A good example of first-party risk arising from natural

events is the 2011 Halloween nor’easter ice storm, which caused 3,389,000 power outages from Maine to West Virginia. Not only were homeowners without power, but many companies could not open without power, computer systems were inoperative due to extensive power outages, and workers were unable to leave their homes let alone navigate the downed power lines on their way to work.

Third-party coverage protects against risk of loss to property belonging to another. The most standard form of third-party coverage is the Comprehensive General Liability (CGL) policy, which was designed to protect against all risks (it was initially sold in 1941 as the “all risk” policy) that manufacturing might pose to others. Third-party environmental risks are pervasive. In addition, there are persistent risks of claims like the \$1.4 billion study cost of the Passaic River natural resource damage (NRD) claims, Hanford Nuclear Reservation NRD claims, the Fox River, and others, including failing water infrastructure claims, that are posing new and major risks.

B. Contracting Away Risk

Beyond insurance coverage, there are a number of other risk management quills in the company’s risk management quiver. One available to many companies is indemnification and other equivalent contractual agreements. In fact, perhaps the most common way of transferring risk is by contract or legal notice. Ken Brownlee, *Liability Insurance for Disasters Triggered by Human Activities*, CATClaims § 12:32 (Nov. 11, 2011). Another way of transferring risk is by means of exculpation. *Id.* The core problem with indemnity agreements, of course, is that the promise is only as good as that of the word of the indemnitor.

C. Concurrent Causes and Cause of Loss

A study of catastrophic insurance claims over the past 20 years reveals that a hidden vulnerability for both insurers and insureds is cause of loss. The difficulty is in definition of cause and causation. If an insured’s policy addresses hurricane risk but not flooding, does the insured’s claim fall within the scope of coverage if a hurricane hits Miami, does not injure the insured’s building significantly, but then causes flooding that

destroys the insured's ground floor? Is the cause the hurricane, the flood, or both? Or take a more complicated example, the World Trade Center. Perhaps the safest approach is to negotiate an endorsement beforehand that if any covered claim is triggered that the claim will be covered regardless of other competing causes.

D. What Are the Direct and, More Importantly, Indirect Risks of Fracking and Nuclear Energy?

Although the conventional wisdom for now is that fracking is not a real risk and that U.S. nuclear plants are safe, for planning purposes we must assume that the risk of potential catastrophic loss from human-influenced risk is real. Contrary to the assertions that there is no proof that fracking poses a risk to surface water supplies, fracking has been proven, at least in some circumstances, to cause surficial contamination. Stephen G. Osborn, *Methane Contamination of Drinking Water Accompanying Gas-Well Drilling and Hydraulic Fracturing*, 108 PROC. NAT'L ACAD. SCI. 1872 (2011). Kirk Johnson, *EPA Links Tainted Water in Wyoming to Hydraulic Fracturing for National Gas*, N.Y. TIMES, 2011 WLNR 25454422 (Dec. 9, 2011). The loss to the property where fracking occurred or to the power plant is significant only to a limited few (the property or plant owner and perhaps to their indemnitor). Similarly, U.S. nuclear power plants are permitted legally to discharge tritium into waterways and into the air. *Radioactive Leaks Increasing at U.S. Nuclear Plants*, ASBURY PARK PRESS, 2011 WLNR 10498779 (May 20, 2011). Tritium is a form of hydrogen, which EPA has advised increases the risk of developing cancer, and is reportedly leaking from at least 48 of the United States's 65 commercial nuclear power plants. *Surry's Tritium Leak Is Common*, DAILY PRESS, 2011 WLNR 12463083 (June 22, 2011). Finally, and to make matters worse, there is a growing voice in the science community that fracking (injecting water into super hot layers of the earth below ground) could induce earthquakes. This risk, if real, was never contemplated by engineers designing our nuclear plants. Scientists in the United States and the United Kingdom are increasingly worried about the link between fracking and earthquakes. Mark Fischetti, *Ohio Earthquake Likely Caused by Fracking*

Wastewater, SCI. AM., Jan. 4, 2012; *Tremors in UK City Likely from Gas Fracking*, Domain-b.com, 2011 WLNR 25881261 (Nov. 3, 2011).

E. The Planning Process

In the planning process, agree upon the goals and upon some of the core terms to be used in setting those goals. Perhaps a model goal would be to address through risk management the risk of loss posed by a catastrophic event so that the company can fulfill its manufacturing objectives and goals. What do these terms mean—*risk* and *loss*? *Risk* is the potential that an adverse event may or may not occur. *Loss* is a distinct concept in that loss requires there to have been an adverse event and for there to have been some consequence as a result of that event. Loss, which can be either partial or total, is, in short, injury or damage sustained by the insured. The definition of what constitutes loss varies but typically loss requires that there be an actual claim, settlement, or judgment for money damages. Prior to there being a claim, settlement, or judgment, there is normally the mere risk (potential) of loss but not a loss. This distinction is critical because many carriers will wrongly assert a “loss in progress” based upon the mere presence of risk.

Some possible issues to consider in the planning process are the following:

1. Bring in an outsider. Invite an outsider to assist you in planning—the corporate culture is often too strong to allow for independent assessment of what can and may go wrong.
2. Allocate responsibility and have a catastrophe risk management plan.
3. Make sure that your “backup” plan is not in the same geographic area.
4. Consider a modified captive insurer. With rising interest rates, it may be worthwhile from an institutional perspective to increase your self-insured retention (SIR) significantly and rely upon non-U.S. carriers to insure the amount over the SIR.
5. Pooling risk with other companies may not be a great idea depending upon the risk.
6. Start the renewal process early and have an agenda of coverages you want your broker to consider.

7. At the level of catastrophic coverage, many brokers push Bermuda form coverage, but few brokers really understand what it is that they are selling. Bermuda form coverage structurally favors the insurance carriers for a host of reasons and is costly to trigger—even if your client has a valid claim. If you are not proceeding with a surplus lines carrier, particularly Bermuda form coverage, make sure that you really understand how that policy will function if you are facing a catastrophic claim.

F. Some Likely Risks That Must Be Considered Based upon Catastrophic Disasters of 2011

In no particular order, risks that are likely to occur in the event of a disaster like Fukushima in or from fracking (and which may not be all that different from an ice storm or a hurricane) would include the following:

- Loss of access to electronic data
- Inability for employees to access the plant or corporate headquarters
- Business interruption
- Loss of clean rooms for manufacturing sensitive goods
- Flood
- Wind, hail, fire
- Riot
- Power outages
- Sinkhole collapse, volcanic action, explosion
- Lightning
- Claims against the directors and officers
- Noncompliant goods due to substandard water
- Coverage for rebuilding

In brief, catastrophic layer coverage operates differently from primary layer insurance. After negotiating intensely for the best coverage and the best deal, the broker, insured, and the insurer are happy to establish that they have put coverage in place. Unfortunately, when disaster strikes, we find all too often that the documentation does not really reflect the understanding that the parties had at the inception of the insurance relationship. If you plan ahead, your insurance program will work synthetically, with all layers responding consonant with those layers below

and there will be no gaps based upon a failure to appreciate the mechanical differences between primary, excess, umbrella, and catastrophe layer coverages.

II. Insurance Coverages That Respond to Catastrophic Loss

In discussing insurance coverage with your client and your broker, there are at least three discussions worth having when considering planning for a potential catastrophic loss. First, what kind of coverage should your client purchase and do those policies work together so as to avoid a gap in coverage? Second, what should your client be concerned about in the endorsements, which can limit or expand coverage? Third, drafting and finalizing insurance coverage at the corporate level takes time—what is adequate proof of an agreement regarding the existence and extent of coverage? If it were to occur, a catastrophic loss from fracking could poison groundwater, surface water, and the surrounding air and will raise a number of risks to adjacent property owners and businesses. Even a minor release from a nuclear plant could be equally and perhaps more devastating to down-gradient property owners. Property owners and businesses down-gradient of the release will suffer a first-party loss (flood, fire, business interruption, civil authority shutdown, etc.). Many manufacturers will also face liabilities of their own as there may be difficulties in manufacturing products that meet specifications with an impaired water supply; completed goods may be tainted; and the company may not be able to meet its manufacturing commitments (contractual liability). When discussing coverage for catastrophic risk with your broker, bear in mind that catastrophic layer coverage often requires consideration of surplus lines and non-admitted carriers. Whether the carrier is surplus lines, admitted, or non-admitted is not nearly as relevant as whether the carrier is a quality insurance company—getting insurance from a bad carrier is perhaps worse than getting no coverage at all. If you're considering non-admitted carriers, particularly Bermuda form coverage, make sure that your broker really has an understanding of how this policy is likely to function if your client is faced with a catastrophic loss. At the conclusion of purchasing coverage, *all understandings should be in writing*. A handshake

confirming that coverage is in place will later prove insufficient if a disaster strikes. If there is an agreement, document it now. Once disaster hits, there will no longer have been an agreement.

A. Basic Forms of Coverage to Consider and Which May Respond to Catastrophic Loss

Listed below are some basic forms of coverage to consider and discuss with your carrier:

1. Building and Personal Property Coverage (ISO Form CP 00 10) provides direct damage coverage for the repair or replacement of property damaged by a covered loss. Additional coverages available under this form include:
 - a. Debris Removal [au: ok to move this entry of beginning of list?]
 - b. Preservation of Property
 - c. Fire Department Surcharge
 - d. Pollutant Cleanup and Removal
 - e. Increased Cost of Construction
2. Flood
3. Fire
4. Directors and Officers (D&O)
5. Product Liability
6. Product Recall
7. Employment Liability Coverage (EPL)
8. Comprehensive General Liability
9. Umbrella Coverage

B. Endorsements to Consider to Protect Your Client in the Event of a Catastrophe

When discussing coverage it also is essential to discuss endorsements to enhance the basic coverage obtained through standard form coverage. Some endorsements to consider would include:

1. Concurrent causes. Negotiate ahead of time what will be covered if there are concurrent causes.
2. Nuclear exclusion coverage. The most basic point here is that the nuclear exclusion is *not* nearly as broad as the insurance industry argues when faced with a claim. The Broad Form Nuclear Energy Liability Exclusion Endorsement, which was invoked in 1951 in most CGL and all-risk policies, does not exclude coverage of all radiation-related

damages. If that had been the intended purpose, the exclusion would be significantly shorter and simply state that all injury arising from or related to nuclear material is excluded. Ronald J. Clark & Sean W. Carney, *Just Because It's Nuclear, Doesn't Mean It's Excluded: Liability Insurer's Potential Exposure for Commercial Uses of Radioactive Material*, 78 DEF. COUNS. J. 344, 346 (2011).

3. Cost of rebuilding and relocating. Negotiate a change in coverage from replacement cost to insured value plus a percentage.
4. Litigation is costly. Negotiate legal cost and control now. When purchasing insurance, pay attention to provisions regarding the "Duty to Defend," "Control of Defense," "Authority to Settle." You can modify this language and require the carriers to pay defense costs up front rather than when your company is reeling from a catastrophic loss. Control of defense and choice of counsel are critical because you will want to ensure that lawyers loyal to you are controlling a claim, not lawyers loyal to the carrier. Finally, negotiate legal fees now or agree upon a split now.
5. Pollution exclusion. Critically, the Absolute Pollution exclusion requires that the harm have been caused by pollution. Avoid the Total Pollution exclusion and seek to clarify the Absolute.
6. Other insurance. Negotiate a modification that if a risk of loss is covered, whether it is covered by another line of coverage or not, then the policy responds, but that the carrier will have a right of subrogation against another carrier. In short, let the carriers fight it out but make sure that you get paid. Beware of "co-insurance" provisions because some policies dictate that coverage exists only so long as other coverage is in place.
7. Follow the fortunes. To the extent possible (and it may not be possible with Bermuda coverage) *negotiate* a "follow the fortunes" provision, which in essence requires excess carriers to follow the underlying primary policy.
8. Carefully consider manuscript language. Standard language is to be interpreted in favor

of the policyholder under the doctrine of contra proferentum, which states that where one party (the carrier) has greater bargaining power, any ambiguities should be construed in favor of the insured. In manuscript coverage, where the language is arguably negotiated between equally sophisticated parties, the policyholder will likely lose contra proferentum.

9. Count occurrences now (or, at least know how your coverage counts occurrences).
10. Choice of law. In tough cases, choice of law (occasionally choice of forum) decides coverage claims. Catastrophe layer coverage is typically determined by New York law, which is heavily in favor of carriers over the interest of policyholders. Bermuda form coverage similarly looks to New York common law. Know which policies have a choice of law provision and how they will react in response to a catastrophic claim.
11. Dispute resolution provisions. It is relatively rare to have an enforceable dispute resolution provision in primary coverage but it is not at all unusual in an excess or umbrella coverage. Resolving insurance coverage disputes by arbitration is only slightly less expensive than simply litigating them, and in arbitration the policyholder often loses the rules of construction and choice of forum that could favor the policyholder.

C. Enhanced Coverages to Consider

1. Business Interruption insurance and Contingent Business Interruption coverage are both critical but complicated forms of coverage. Business Interruption coverage is triggered by damage to the property of third parties not insured by the policy. For example, the policy may insure the policyholder's suppliers, customers, or distributors. Notice must be given immediately. The most difficult part of Business Interruption coverage lies in calculating lost earnings. Obtaining an expert's advice is strongly recommended to understand how the insurance policy is interlinked to profit and loss statements, continuing expenses, past earnings, earnings projections, etc. When does the

business interruption period end? Under Business Interruption, Contingent Business Interruption coverage, and Contingent Extra Expense coverage, pay particular attention to the period of restoration, to the nuclear exclusion's scope, to "waiting periods," and to the definition of loss (what income are you able to recover for, specifically).

2. Contingent Business Interruption coverage, which is distinct from Business Interruption coverage, is triggered if (1) the loss suffered by your company's supplier or customer *and* (2) the physical damage to the suppliers or customers (cause of loss) would have been an insured loss if it had occurred on your client's own property.
3. Contingent Extra Expense coverage is similar to Business Interruption and Contingent Business Interruption coverage, but Contingent Extra Expense coverage applies only to the increased cost incurred as a result of loss insured under coverages such as Contingent Business Interruption coverage or Business Interruption insurance. In short, if you have to look for a replacement supply while your primary supplier is unable to operate, Contingent Extra Expense coverage would protect against that risk.
4. Legal expense insurance (LEI), also known as legal protection insurance (LPI), insures the policyholder against the potential costs of legal action against the policyholder. There are two distinct forms of LEI/LPI coverage. The first addresses "before the event," which is in essence a glorified prepaid legal services agreement. "After the event" coverage is basically coverage to insure the risk of nonpayment for legal services incurred in response to a known loss.
5. Claims preparation coverage covers the reasonable expenses incurred by the insured for professional services such as auditors, accountants, architects, and engineers. In any sizable property insurance claim the policyholder incurs significant costs in collecting proofs for the claim, in presenting the claim, and in responding to the insurer's

demands regarding proof of the claim. The purpose of this coverage is to cover the risk of those expenses.

6. Civil authority coverage insures against the risk of loss from a governmental or military order, where that order affects or impairs your company's ability to operate normally.
7. Service interruption coverage protects against risk of loss of electrical power or other power supply interruptions.
8. Ingress and egress coverage insures against loss for sustained inability to access the property in question. This coverage is normally distinct from civil authority coverage but rather focuses on direct physical inability to access the property. The policy does not require direct physical loss but merely sustained inability to enter the insured facility.
9. Punitive damages coverage. Contrary to conventional wisdom, a sophisticated insured can insure against the risk of loss due to punitive damages.
10. Bumbershoot coverage (a bumbershoot coverage is designed to fill in any coverage gap-based exhaustion or difference in coverage between underlying and excess coverages). This can also be accomplished by difference in conditions (DIC) and difference in limits (DIL) coverage. Bumbershoot policies should be considered.

III. Checklist of Immediate Response Items

The first step is to provide immediate notice to all carriers of a potential loss. Elements of notice are simple: type of loss, location name, address of location, policy number, and the broadest conceivable description of damage. Seek immediate advice regarding framing of notice so that you can ensure coverage from all policies, particularly catastrophe layer coverage (which may involve Bermuda form coverage and New York law). Timing is particularly critical on business interruption coverage, adjuster's coverage, claims handling coverage, and accounts receivable insurance. Due to the nature of the policy itself, any costs incurred voluntarily before giving notice to the carrier regarding business interruption, adjuster's coverage, and claims handling coverage may be

waived if notice is not immediately given. Although it is important to know which policies require more immediate notice than others, it is also important to know what not to do. For example, the insured should not engage in self-help before documenting the loss to the facility—and preferably, the insured should not take action until the adjuster has arrived and can document the loss independently of the insured.

1. Provide notice to *all* layers, paying particular attention to business interruption, adjuster's coverage, claims handling coverage, and accounts receivable coverage.
2. Do not make any changes to the property where the disaster has occurred until you've photographed and attempted to document the harm. A strong natural reaction is to jump in and start remediating the harm—document it first. Preferably, have your adjuster document it first.
3. Document all costs. Assign someone the task of documenting all costs, keeping all receipts, and being prepared to present all proofs of financial loss attributable to the risk.
4. Put a risk management response team in place. The insurer is not going to simply offer to pay up on a catastrophic loss. Rather, you are in for a fight. Plan ahead.
5. Litigation is a tool—be prepared to use it immediately. *Forum decides tough cases*. If your carrier files first and files in a hostile jurisdiction (one wherein the policyholder will lose), then your chances of securing coverage are greatly diminished. Most catastrophe coverages require New York choice of law. New York law was not chosen by chance—New York law strongly favors carriers. The policyholder buying catastrophe layer coverage needs to understand New York's definition of occurrence (is the World Trade Center one or two disasters?), New York's requirement for immediate notice, and New York's rules of construction regarding ambiguity, mutual mistake, and reformation.
6. Lean on your insurance broker. Your broker promised to protect you in the event of a risk and was paid well to do so. Malpractice claims against insurers are on the rise and in response

many insurance brokers are now requiring corporate clients to execute service agreements. Hidden within the service agreements, typically, is a provision that the broker will not be liable for its own negligence or that any exposure to the broker is capped at a nominal amount (\$5 million or \$10 million).

7. Be better prepared than your insurance carrier. Know where the money has been spent. Know what the source of the liability is and be prepared to prove it.
8. Determine the insurance company's exposure and risk before you meet with them.

IV. Conclusion

Catastrophic loss is different both because the frequency of the events leads to difficulty in predicting the likelihood of loss but also because the mechanics of catastrophic loss coverage are different than that of

lower layer coverage. It is impossible to know at this stage whether a nuclear incident is likely or whether fracking will pollute groundwater or lead to an earthquake, but what is absolutely clear based upon current trends is that the risk of a catastrophic loss is increasingly likely. Forewarned is forearmed and I hope that this article has provided some food for thought as to steps to be taken now to ensure your company's ongoing viability in the future should we face another catastrophic loss.

Jeffrey M. Pollock is a partner at Fox Rothschild, 100 Park Avenue, New York, N.Y. Jeff represents policyholders in both domestic litigations as well as international coverage disputes. Having graduated from Hamilton College, he received his LLM from New York University School of Law and then clerked for Chief Judge Donald P. Lay of the U.S. Court of Appeals for the Eighth Circuit.