U.S. Department of Energy
Notice of Inquiry on
Convention on Supplementary Compensation for Nuclear Damage
Contingent Cost Allocation,

Comments of
Contractors International Group on Nuclear Liability

November 2010

**CIGNL’s Interest**

CIGNL is an *ad hoc* nongovernmental group of major U.S. nuclear suppliers formed in 1993 to promote more widespread adherence to the international nuclear liability conventions and adoption of domestic nuclear liability laws. In particular, CIGNL actively promoted ratification of the CSC by the United States after it was signed in 1997, because CIGNL believed the CSC would help open international nuclear export markets to the United States. The CSC was specifically designed to allow the United States to establish treaty relations with all of its existing and future trade partners on the issues of liability. Once in force, the treaty will remove a major barrier to trade in nuclear goods and services with these countries.

CIGNL worked closely with the Administration and Congress in securing the ratification of the CSC in 2006 and enactment of implementing legislation in 2007. CIGNL also has been working closely with the U.S. Government, the International Atomic Energy Agency (IAEA) and others to encourage more States to join this important Convention. CIGNL’s current members are as follows: The Babcock & Wilcox Company; Bechtel Power Corporation; ConverDyn; GE Hitachi Nuclear Energy LLC; Shaw Stone & Webster, Inc.; USEC Inc.; and Westinghouse Electric Company LLC.

CIGNL’s interest in submitting these comments is to ensure that the DOE rulemaking facilitates the fulfillment of the CSC’s promised opening up of trade for the United States in foreign markets. CIGNL believes the CSC fully supports the President’s Export Initiative and, importantly, will ensure that the United States remains a leading participant in the global nuclear industry, with attendant benefits for U.S. nuclear policy and the American economy. To the extent the rulemaking burdens the U.S. industry with the specter of uncertain costs or provides incentives not to export, it will defeat the purpose behind the CSC.

The comments offered by CIGNL are intended to provide preliminary observations on the rulemaking. Recognizing the difficult task that DOE faces and the considerable uncertainty about how to implement the 2007 legislation, CIGNL and each of its members respectfully reserve our rights to provide additional comments, collectively or individually, as this rulemaking proceeds. Of particular importance to all the members of CIGNL is that the exposure of individual suppliers to liability for a share of the U.S. contingent cost is capped at a reasonable level, as more fully discussed herein.

\(^1\) CIGNL has identified at least 27 points on which the DOE NOI invites public comments. These comments cover the points CIGNL considers the most critical. CIGNL reserves the right to comment further when DOE publishes a proposed rule as required by the Administrative Procedure Act and the DOE Organization Act. Furthermore, individual CIGNL members reserve the right to file separate comments on particular points in the DOE NOI.
Opening Remark – Need for a Cap on Liability

CIGNL is concerned that the requirement that nuclear suppliers contribute financially to the U.S. share of a call for funds under the CSC will impose a great financial burden that will reduce the competitiveness of the U.S. nuclear industry and discourage new entrants into the industry. The U.S. industry can ill afford such a burden, given the comparative resources of government-owned foreign competitors. This burden also runs against the Administration’s efforts to encourage U.S. exports and competitiveness. Further, other nations and their nuclear industries surely are closely monitoring the outcome of this rulemaking and its impact on domestic industry. If it results in a significant burden on U.S. industry, the enthusiasm in other countries for ratification of the CSC could be significantly diminished, which would negate the efforts of both the U.S. Government and the U.S. industry to encourage ratification by our trading partners. Moreover, if other countries adopt the U.S. approach, it could result in U.S. suppliers also being treated as suppliers under the implementing laws of other CSC member countries and thus also being required to share in the contingent cost allocated to those countries in addition to the contingent cost allocated to the United States, thereby further burdening the U.S. industry with costs it cannot afford.

While CIGNL recognizes that the DOE rulemaking responds to a statutory requirement, it should also conform closely to the principles articulated in the implementing legislation that were intended to mitigate the impact on the industry. Accordingly, CIGNL’s comments are directed primarily at ensuring that these principles are reflected in whatever rule DOE may adopt.

For all of the foregoing reasons, the single most important feature of any future DOE rulemaking implementing the CSC must be the establishment of a maximum contribution that a company would be required to make. The legislative history of the implementing legislation indicates that Congress intended such a maximum or cap be adopted. Given the uncertain outcome for companies of any “risk-informed” calculation and the need to demonstrate to the U.S. industry and to suppliers and governments worldwide that the CSC is not a drag on competition, CIGNL urges the Department to clearly state that no single company will be asked to contribute more than $5 million of the contingent cost. A firm maximum would be consistent with the legislative history of the Act, which stressed that DOE must ensure that “the contingent cost is not allocated disproportionately to one supplier.” Such a firm number will have the advantage of allowing companies to plan for their potential risk under the DOE rulemaking, including possibly securing insurance to cover that risk. At a minimum, having a firm number in hand as a company’s maximum exposure will provide a basis for discussion between the industry and insurers regarding the cover that could be provided to individual companies to address their risk. A $5 million maximum exposure for any single company also ensures that any large CSC call for funding in response to a catastrophic event will be necessarily allocated across the nuclear supplier industry as a whole and not overly burden any particular sector within that industry. This proposed $5 million per-company cap on CSC contingent liability is discussed further below under “Minimum and Maximum Shares.”

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Background

The NOI commences the DOE rulemaking required by the 2007 CSC Contingent Cost Allocation Act (the 2007 Act or the Act), which was enacted as Section 934 of the Energy Independence and Security Act of 2007 and codified at 42 U.S.C. §17373. CIGNL was concerned when this CSC implementing legislation was being considered by Congress that it would be extremely difficult to allocate the U.S. contingent cost among U.S. “nuclear suppliers.” Because funds may never be needed, CIGNL submitted that Congress should not attempt to establish a funding mechanism in advance of an accident that may never happen or before it is better known how many other countries will participate in the supplementary fund. CIGNL did not anticipate that the rulemaking would ever precede the CSC coming into force.

Virtually all countries which have implemented a civil nuclear energy program already have in force legal regimes largely consistent with the principles of the CSC Annex. Moreover, many States have also already entered treaty relations embodying these principles (i.e., as Members of the Paris or Vienna Conventions). As such, the CSC is an international instrument that permits the United States and current non-treaty states to join in treaty relations on the main principles of nuclear liability. In the case of the United States, the Price-Anderson Act applies a different, but essentially equivalent, approach with economic channeling, rather than legal channeling as exists under the laws of other countries.

The international supplementary fund is a novel development, and goes beyond the current, widely-accepted legal principles applicable to the global nuclear power industry. As originally conceived, the obligations of Member States to support the fund are intended to be sovereign obligations, namely Member States recognizing the importance of supporting the global utilization of peaceful nuclear energy and the national interests of States to join together to provide aid to another Member State in the unlikely event that a nuclear accident occurs. However, the means by which the United States has chosen to allocate its sovereign obligations could create additional complexities in negotiations with countries that may wish to join the CSC. Accordingly, DOE must craft its rule carefully to ensure that the United States is handling its fund obligation

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3 The CSC itself does not require Parties to have funds identified or available before an accident occurs and funds are called for. The Price-Anderson Act is an example that might have been followed: It contains a provision (42 U.S.C. §2210(e)(3)) stating that the Act may not be construed to preclude Congress from enacting a revenue measure, applicable to Nuclear Regulatory Commission (NRC) licensees, if needed to fund any action taken by the U.S. Government to cover claims in the unlikely event of an especially disastrous nuclear accident (in excess of the $12.5 billion now covered by NRC licensees). The CSC supports important U.S. national nonproliferation and nuclear safety interests, which should continue to be funded and self-insured by the U.S. Government. It was not appropriate to assess only “nuclear suppliers.” Suppliers may not have had any involvement with the foreign plant that had an accident, and do not benefit from the operation of plants. Ad hoc participation by the U.S. Government in the international nuclear safety program established following the Chernobyl accident has cost over $900 million since 1992, while the maximum U.S. share under the CSC, if ever needed, would be far less. It is in the interest of the U.S. Government to create a more level playing field for U.S. nuclear suppliers whose exports can create U.S. jobs and wealth in this country, and help preserve our nuclear infrastructure. Civilian nuclear power programs elsewhere in the world in almost all instances have a common legal framework providing for channeling of all nuclear liability to the facility operator. This is the case under the Paris Convention on Third Party Liability in the Field of Nuclear Energy applicable in Western Europe and the worldwide Vienna Convention on Civil Liability for Nuclear Damage. Suppliers in all countries that are parties to a Convention or whose law channels liability to the operator are not exposed in those countries. Requiring suppliers to fund U.S. participation in the CSC goes against bringing the United States more in line with the international nuclear liability regime that generally channels all liability to the facility operator. Actually, the direct beneficiaries of the system are the nuclear power generators; for, in the event of a nuclear incident in the United States, the nuclear operator in the United States will receive funds from the other CSC Member States in an amount ranging from about $66 million to about $450 million.
rationally, and is not exposing U.S. suppliers to potentially unreasonable risks and costs. Further, to help minimize the impact of the rule on decisions made by other countries with respect to the CSC, we strongly suggest that, in its rule, DOE make clear that the approach taken by the U.S. Government in the 2007 legislation to shift the financial burden for the U.S. contingent cost onto suppliers was a choice made by the U.S. Congress, and is not required by the terms of the CSC (meaning that other countries are free to join the CSC without imposing this burden on their suppliers).

A DOE rule that makes clear that the cost per company will not be significant or at least will be capped could allay those concerns, and help speed ratification by other countries. By contrast, a rule that does not limit the cost per company to a reasonable level could have the opposite effect.

There currently is little or no data now available for guidance on risk and no clear way to identify entities that have or are furnishing goods and services to foreign nuclear installations. Indeed, there are no existing systems that control or collect information on the export of goods and services specifically for nuclear projects that, in response to DOE’s inquiry, could be useful in implementing Section 934. For example, data available with respect to DOE’s 10 C.F.R. Part 810 export authorizations and NRC’s 10 C.F.R. Part 110 export licenses provide meager information about the extent of nuclear goods and services exported from the United States. Absent further data collection by DOE, any rule based on the six factors would have to be speculative and subjective, rather than being based on the type of empirical data typically used by commercial insurers to set their premium rates for covering conventional nonnuclear risks, and such a rule would be subject to challenge as lacking a rational basis.

CIGNL therefore respectfully requests that DOE call stakeholder meetings, hold field hearings, advertise and seek the advice from the Civilian International Nuclear Advisory Committee (CINTAC), the President’s Export Council, the Manufacturing Council of the Department of Commerce and the current leaders in the effort to double exports in five years, the National Export Initiative, to learn how such a proposed rulemaking might affect the competitiveness of American nuclear technology companies and the impact this rulemaking might have on discouraging export growth.

The NOI says the retrospective risk pooling program for nuclear suppliers is “similar in certain respects” to the Price-Anderson Act retrospective pooling arrangement. 75 Fed. Reg. at 43949. CIGNL disagrees. In the case of Price-Anderson, which requires the same retrospective assessment to be paid by each nuclear power reactor, regardless of power level, location, reactor design, etc., each operator is performing the same activity (generating power using nuclear

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4 The NOI says DOE would be interested in whether there are any existing systems that control or collect information on the export of goods and services for nuclear projects that could be useful in implementing Section 934. 75 Fed. Reg. at 43953. A recent report of the U.S. Government Accountability Office (GAO) cites the fact that no single Federal Agency systematically tracks and reports the data necessary to determine the amount and value of U.S. nuclear exports facilitated by U.S. nuclear cooperation agreements. See GAO, Nuclear Commerce – Governmentwide Strategy Could Help Increase Commercial Benefits from U.S. Nuclear Cooperation Agreement with Other Countries, GAO-11-36 (Nov. 2010).

5 At the present time, the 104 operating nuclear power reactors range in capacities from 482 MWe (Fort Calhoun, Unit 1) to 1,335 MWe (Palo Verde, Units 1 to 3). Each would be required under Subsection 170(b) of the Price-Anderson Act to pay the same amount of deferred premium, i.e. $111.9 million plus 5 percent for legal costs. The deferred premium has been applied on
energy), and each has an equivalent stake in the financial protection that the Price Anderson system provides for responding to the legal liability of an operator under applicable U.S. law.

U.S. suppliers to foreign nuclear installations face far different circumstances. These suppliers do not all perform the same or even similar activities, and the goods and services they supply are quite diverse. Therefore, each individual supplier’s risk that an incident could lead to a financial liability for that supplier varies widely, and, in most cases, is quite small. It is of course instructive that to date U.S. suppliers have had an exemplary safety record. In the more than 50-year history of nuclear power (with 438 operating nuclear plants), there has not been a nuclear accident involving U.S. suppliers. The risk of U.S. suppliers being involved in a nuclear incident is highly improbable and remote. Indeed, the only significant incident with offsite nuclear damage in the history of nuclear power was the Chernobyl accident. That directly resulted from operator error in turning off safety systems, rather than any particular involvement of nuclear suppliers.

While the CSC would improve the international protection of the public and suppliers against the risk of liability, which is a key reason we have supported the CSC, the value of the CSC for individual suppliers is difficult to measure, particularly in cases where U.S. suppliers may be responsible for contributions where there is no U.S. export commerce involved, and certainly does not lend itself to assessment of supplier liability on a per capita basis as with the Price-Anderson system.

Given the obvious complexities, Congress has directed the DOE to come up with a formula, rather than providing the formula in the statute. As the balance of CIGNL’s response to the DOE NOI will suggest, the process of creating and implementing a rational risk-based formula requires, at a minimum, the collection of additional data, the careful analysis of this data, and then an iterative process with industry to develop a fair rule. Without such a careful and complete rulemaking (which the NOI does not provide), any rule that may emerge from DOE’s efforts will be fundamentally flawed and potentially subject to legal challenge.

Further, we cannot emphasize enough the importance of ensuring the rule ultimately adopted by DOE supports the creation of an insurance mechanism that companies could use to cover their financial liability to contribute to the contingent cost. Section 934 specifically requires the Secretary of Energy to “make available to nuclear suppliers, and insurers of nuclear suppliers, information to support the voluntary establishment and maintenance of private insurance against any risk for which nuclear suppliers may be required to pay deferred payments under this section.” The most significant piece of information for suppliers and insurers would be a cap on the financial liability of each company. With this information in hand, insurers and suppliers can have a more meaningful discussion of the potential for private coverage of company risk. Absent setting a maximum cap of a reasonable tenor, given the myriad of nuclear suppliers that could contribute to pay the contingent cost, and the relative risks of covered incidents involving the various categories of covered installations in CSC counties under the approach

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discussed below, the use of insurance as a mechanism for industry to meet its financial obligations under the implementing legislation will be unrealized.6

Report to Congress

The 2007 Act requires DOE to submit to Congress a report on whether there is a need for continuation or amendments of the Act “taking into account the effects of the implementation of the Convention on the United States nuclear industry and suppliers.” 42 U.S.C. §17373(e)(2)(iv). The first such report is due not later than December 19, 2012. DOE should consider submitting an earlier report to Congress detailing the impractical nature of determining an equitable “risk-informed assessment formula” having a rational classification based on risk for the allocation of the contingent cost of a foreign incident covered by the CSC, and its impact on the competitiveness of the U.S. nuclear industry.

Legislative History

The DOE’s NOI should be guided not only by the statute, but also by the legislative history that preceded adoption of the statute. In September 2006, the Senate Committee on Environment and Public Works adopted a report7 on legislation that included language on the assessment formula that is identical to the language used in the statute. In this report, the Committee included a number of key points regarding Congressional intent on the risk assessment formula that CIGNL believes should be taken into account in the DOE rule:

- “In developing this formula, the Secretary need not limit the examination to ‘covered installations’ in countries that have ratified the Convention, but also may consider covered installations in countries that have signed the Convention and in other countries that the Secretary concludes are likely to join the Convention within a reasonable period of time.”8

- “[T]he Secretary must take into account certain risk factors that focus on the extent of the potential liability of a nuclear supplier that could result from its goods and services relative to the goods and services of other nuclear suppliers. The formula is expected to exclude nuclear suppliers that do not provide goods or services specifically for nuclear facilities outside the United States or whose goods or services are not likely to result in significant potential liability outside the United States.”9

- “The Committee believes the Secretary should also ensure that the burden imposed by the risk-informed formula among nuclear suppliers is shared in a fair and equitable manner, and that the contingent cost is not allocated disproportionately to one supplier.”10

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6 Indeed, CIGNL believes that DOE should consider helping industry establish an insurance mechanism, by seeking authority to partially fund an insurance mechanism that, with the collection of premiums from industry, can eventually graduate into a fully private insurance mechanism. The private market appears reluctant at present to establish a pool, and would benefit from DOE leadership on this issue.
7 Senate Committee Report, supra note 2.
8 Id. at 4-5.
9 Id. at 5.
10 Id.
Accordingly, the formula may provide for a minimum and maximum share to be borne by nuclear suppliers not otherwise excluded from the formula.”

- “[T]he Secretary should endeavor to ensure that nuclear suppliers do not undervalue their goods and services in order to shift greater liability onto other nuclear suppliers, and that the implementation of Section 6 of the Act does not create an incentive for nuclear suppliers to shift their business activities off-shore in order to avoid or minimize their obligations under the Act or the formula.”

- “Given the variability of prices of nuclear goods and services in the market and the lack of any necessary connection between the price of a good or service and the risk or hazard it poses, the share of the contribution assessed on a nuclear supplier should be determined principally by the risks and hazards associated with such nuclear supplier’s goods and services, as indicated by the factors listed in the Act.”

- “Generally, in implementing this Act and, in particular, in arriving at the risk-informed assessment formula under Section 6(b)(3), the Committee believe the Secretary should seek to (i) minimize any adverse competitive impact of this Act on nuclear suppliers in the United States or foreign markets and (ii) avoid discouraging nuclear suppliers from engaging in manufacturing, research and development or other activities in the United States or from participating in U.S. Government-sponsored projects or activities either in the United States or abroad.”

**Price-Anderson System, “Nuclear Supplier” and “Covered Person”**

The DOE NOI recognizes that the term “nuclear supplier” as defined in the 2007 Act, 42 U.S.C. §17373(b)(7), is “potentially very broad in scope, complex, and subject to interpretation. Indeed, which entities should fall within this definition is the key threshold issue of this rulemaking. As indicated supra, there is little or no data now available to identify which entities located in, or carrying out activities in, the United States have or are furnishing goods or services to foreign nuclear installations. For example, CIGNL so far has identified as many as 300 to 1,800 types of goods or services that go into constructing and operating a nuclear power plant. The NOI says the Department is considering whether it may be appropriate to include in its regulation additional criteria and requirements which, if met, would exclude certain nuclear suppliers from participation in the retrospective risk pooling program. It does not appear to be necessary for the DOE rule to contain a further definition of the term “nuclear supplier” itself, as long as other parts of the rule delineate such matters as which nuclear suppliers will be excluded from participation in the risk pooling program and formula and/or reporting requirements (e.g., on the basis of a “de minimis” share of the contingent cost).

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11 Id.
12 Id.
13 Id. Given that under international conventions, such as the Paris and Vienna Conventions, and the laws of most foreign nations, operators and not suppliers are supposed to bear exclusive liability for public liability arising from a nuclear incident, the allocation of liability to suppliers on any basis, including risk, runs counter to the principles on which international nuclear liability systems have been built.
14 Id. The Act potentially will not achieve either of these objectives if it imposes significant risks and burdens on U.S. suppliers beyond those that they face today.
However, consistent with the terms of the statute, it is important that the DOE rule clarify the meaning of the phrases “pertaining … to a covered installation” and “could result in a covered incident” in the statutory definition of “nuclear supplier”, as it is important to understand whether they operate to exclude any suppliers from the definition. Additionally, in looking at the term supplier, it is important to recognize that the involvement of companies in supplying goods and services varies over time, and that only applying the formula to companies that supplied goods or services to CSC countries at the time of an incident may unfairly exclude others who supplied goods and services at an earlier time (and benefiting from the CSC at the time of their export activities), but were not exporting at the time of the incident. Therefore, the DOE rule should include an appropriate “look back” to periods before the incident occurred (but not before the date the CSC comes into force) in order to capture all companies who may have supplied goods and services to foreign installations during that time and benefited from the existence of the CSC, even if they do not export such goods and services at the time of the incident.

The term “covered person” is defined broadly in the 2007 Act. Nevertheless, it is appropriate that, as indicated in the NOI, 75 Fed. Reg. at 43948-49, “[t]he Department currently expects to define a covered person in the broadest manner as including, for example, any individual or entity, whether of foreign origin or domestic, that carries out any activity in the United States that is determined to provide an appropriate basis for allocating the contingent costs.” It is particularly important that the regulation make clear that the U.S. operations of foreign companies, if engaged in exports from the United States, will be subject to the Department’s contingent cost allocation formula.

While the 2007 Act contains broad definitions of the terms “nuclear supplier” and “covered person,” some have suggested that the 2007 Act’s provisions that a person that may be required to pay if there is a “Price-Anderson incident” within the United States would never have to pay for “covered incident” that occurred outside the United States. This, for example, would mean that any U.S. nuclear power plant operator that separately sold goods or services (e.g., operator training) to a nuclear installation outside the United States would not be subject to the Department’s contingent cost allocation formula. The DOE rule should make it clear that that is not the case, i.e. any U.S. nuclear power plant operator or other person who sells goods or services associated with a covered installation outside the United States would to be subject to assessment without regard to the fact it also is a U.S. nuclear power plant operator. There is no rational basis to exclude such persons as nuclear suppliers, if they are engaged in exports of nuclear goods or services to one or more CSC countries.

These terms would suggest that only companies that supply facilities, equipment, fuel, services, technology or transportation to facilities of the types covered by the CSC at the time an assessment is made would fall under the definition of “nuclear supplier”.

When the CSC enters into force, the Price-Anderson Act amount of public liability will be increased by the funds made available from other CSC Member States under Article VII of the CSC. 42 U.S.C. §17373(d). This amount will depend upon the number of CSC Member States at the time of the nuclear incident. This could range from about $65.6 million to $450 million, and would form a new tier above 300 million Special Drawing Rights (about $459 million). It is anomalous that U.S. nuclear power plant operators will not be required to contribute to the CSC fund for this benefit, while U.S. nuclear suppliers will be required to contribute between about $75 million to 165 million in the event of an accident in another CSC Member State. 42 U.S.C. §17373(e).
“Preventive Measures” and “Precautionary Evacuation”

The NOI observes that the definitions of “preventive measures” under the CSC and “precautionary evacuation” under the Price-Anderson Act are similar in scope and effect. 75 Fed. Reg. at 43947. CIGNL submits there is no need to further clarify those terms in the regulation.

“Nuclear Damage” and “Covered Installation”

There is no apparent need to clarify the separate definitions of “nuclear damage” and “covered installation” in the CSC and the Price-Anderson Act in the regulation. It is important that in applying the risk-informed formula required by the statute, the formula be based upon risks associated with the facilities that could be “covered installations” (i.e., installations in CSC countries where an incident resulting in a call for funds could occur). Certainly installations that are not located in CSC countries should be excluded. Also, as the formula is re-determined over time, it needs to take account of changes in the installations covered by the CSC.

“Price-Anderson Incident”

The DOE NOI says, “For a covered incident that does not constitute a PAA incident, such as a nuclear incident occurring in the territory of a Contracting Party that does not involve U.S.-owned nuclear material, the United States contribution would be provided by the United States nuclear suppliers that must participate in the retrospective risk pooling program.” 75 Fed. Reg. at 43949. That statement, by referring to non-U.S.-owned nuclear material, seems to imply that the goods or services could have been furnished under a DOE contract.17 In such situations, DOE should cover as an allowable cost under its contract any contribution the U.S. supplier might have to make to the CSC fund. The rule should provide for this situation.

“United States”

The DOE NOI notes that the broader geographic scope of the Convention as compared to that of the Atomic Energy Act (and thus the Price-Anderson Act) recognizes the right of a Contracting Party, including the United States, to exercise its jurisdiction in the case of a covered incident that occurs during transport of nuclear material within its exclusive economic zone (EEZ) or in maritime areas beyond the territorial seas under the conditions specified in Article V of the Convention. 75 Fed. Reg. at 43949. The Department further says it believes the definition of “United States” in the 2007 Act, 42 U.S.C. §17373(b)(10), is clear; however, the Department requests public comment on whether additional clarification may be necessary. The 2007 Act’s definition of “United States” is clear. However, this could raise an issue about how to allocate...
shares of the contingent CSC cost, should an accident occur in the U.S. EEZ.\textsuperscript{18} The DOE rule should address this point, particularly since an incident in the U.S. EEZ could be covered under the Price-Anderson Act.\textsuperscript{19}

Given that Section 934(e) of the Act only provides for a retrospective risk pooling program with respect to “the contingent cost resulting from a covered incident outside the United States,” the DOE rule also should make clear that a nuclear incident occurring in the United States is not a covered incident for purposes of the Act, even if it has effects outside the United States.

\textbf{Retrospective Risk Pooling Program}

The key part of DOE’s NOI solicits comments on how the Department should determine the “risk-informed assessment formula” for the allocation among U.S. nuclear suppliers of the contingent cost resulting from a covered incident “that is not a Price-Anderson incident.”\textsuperscript{20} In the 2007 Act, Congress provides little specific guidance about this formula, other than that it should be a “risk-informed assessment formula” that takes into account “risk factors.” The statute lists six example risk factors, three of which refer specifically to “hazards.” None of the risk factors refer to the revenue, profit or other commercial benefit earned by suppliers from nuclear trade. Accordingly, it appears that any formula based solely on commercial measures, without consideration of actual risks, would be in direct conflict with the text of the legislation.

The term “risk-informed regulation” is defined by the NRC as “[a]n approach to regulation taken by the NRC, which incorporates an assessment of safety significance or relative risk.”\textsuperscript{21} While the term is used by the NRC in a context different than the allocation of financial responsibility, it appears that there is a body of literature and expertise of “risk-informed” assessments that could be brought to bear by the DOE in creating a formula. In using the term “risk-informed,” Congress evidently intended that DOE would rely on or make use of the type of “risk-informed” methods such as the NRC has employed for many years. The NRC relies on Probabilistic Risk Assessment (“PRA”) tools to identify risk-significant structures, systems, and components in nuclear facilities, and to assess the safety significance of findings and performance indicators under its Reactor Oversight Process.\textsuperscript{22}

\textsuperscript{18} In connection with the deposit by the United States of its instrument of ratification of the CSC, the U.S. Mission to IAEA on May 15, 2008 advised the Director General, pursuant to Article XIII.2 of the CSC, that the United States has established an EEZ as described in the notice from the Department of State appearing at 60 Fed. Reg. 43825 (Aug. 23, 1995) and as modified by bilateral maritime boundary agreements that entered into force after that notice.

\textsuperscript{19} Under the Price-Anderson Act, the term “nuclear incident” is defined in 42 U.S.C. §2014(q) to include any occurrence outside both the United States and any other nation, if such occurrence arises out of or results from nuclear used in connection with the operation of a licensed stationary production or utilization facility or which moves outside the territorial limits of the United States in transit from one person licensed by the NRC to another person licensed by the NRC.

\textsuperscript{20} The 2007 Act says DOE shall by regulation determine the risk-informed assessment formula by taking into account risk factors “such as” six listed items. 42 U.S.C. §17373(e)(2)(C)(i) [emphasis added]. This means that DOE is not bound by or limited to the six “risk factors” listed in the statute.


\textsuperscript{22} Consistent with Section 934(f) and before promulgating any rule, the Department should collect information about risk and risk-informed assessments from this NRC experience and literature, and engage experts to further develop how these assessments might be applied to the risk-informed assessment formula that the DOE is required to determine under Section 934.
There is no requirement in the statute that the risk-informed assessment formula measure risk precisely. Indeed, given the uncertainty associated with predicting how nuclear incidents could occur, there is no reason that the formula adopted could not be based on broad parameters that have the effect of implementing a “risk-informed” approach in order to comply with Section 934, while at the same time promoting a sharing of costs among broad segments of the nuclear industry based on non-risk factors as well. Using broad risk parameters could lend to the formula a certain “risk logic” to meet the requirements of Section 934. This “risk logic” would use risk as the starting point for allocation without trying to identify with great precision a narrow set of industry participants as the ones whose types of goods or services are most likely to be the cause of, or involved in contributing to, a nuclear incident resulting in a call for funds.

Due to the uncertainty associated with any assessment of risk, as stated above, it will be most important to protect individual nuclear suppliers from an unexpected (and unintended) allocation of a disproportionate burden on one party by also adopting a maximum share which will cap the liability of any individual company, in accordance with the legislative history of Section 934.23

First “Risk Factor” – Nature and Intended Purpose of the Goods and Service

The first risk factor mentioned in the statute is “the nature and intended purpose of the goods and services supplied by each nuclear supplier to each covered installation outside the United States.” 42 U.S.C. §17373(e)(2)(C)(i)(I). The NOI says, “The Department's current approach would be to interpret this risk factor, in light of the presence of other statutory criteria that could exclude nuclear suppliers providing goods and services with negligible risk and in classes not intended specifically for use in a nuclear installation (subsections 934(e)(2)(C)(ii)(I)(aa) and (bb)), to mean that, as a general matter, only nuclear suppliers that provide goods or services specifically intended for use in structures, systems, and components (“SSCs”) that are important to safety at a nuclear installation should be included.” 75 Fed. Reg. at 43950-51. CIGNL believes that additional data and analysis will be needed before the interpretation suggested by DOE is implemented.

Second “Risk Factor” – Quantity of Good and Services

The second risk factor listed in the statute is “the quantity of the goods and services supplied by each nuclear supplier to each covered installation outside the United States.” 42 U.S.C. §17373(e)(2)(C)(i)(II). The NOI indicates the Department seeks public comment on whether this factor should be assessed on the basis of the value of the goods or services supplied. Using the value of goods and services might be the simplest way to use this risk factor, but it would not take into account risk. The same can be said for simply using the volume of goods and services. Note also that, by its terms, this factor is focused upon the volume supplied to “covered installations”, which are installations in countries that are party to the CSC, and not nuclear installations generally. However, under the legislative history quoted above, it would appear that the DOE also could consider installations in countries that are likely to join the CSC.

23 See supra note 11 and accompanying text.
Third “Risk Factor” – Hazards Associated with Supplied Goods and Services

The third risk factor listed in the statute is “the hazards associated with the supplied goods and services if they fail to achieve the intended purposes.” 42 U.S.C. §17373(e)(2)(C)(i)(III). The NOI says the Department seeks public comment as to how it should further define the term “hazard” in light of various factors, such as whether hazard should be differentiated on the basis of harm to persons or property, or on the basis of its hazard standing alone or as part of a redundant system of protection. 75 Fed. Reg. at 43951.

Differentiation of risks associated with particular products or services is quite difficult. A defect in many good or services could be at the heart of a nuclear incident, or the good or service may not be defective at all, but rather used negligently. Moreover, a combination of goods and services could be at the root of any incident (as past “root cause” analyses of incidents have shown). Thus, we believe it is difficult to make an assessment of “hazards” for individual goods and services.

On the other hand, it may be possible to distinguish among broad categories of facilities to which goods and services are supplied, and then assess these facilities relative “riskiness” in terms of whether an incident at facilities in each category that could result in a call for funds. In allocating liability for a category’s share of the contingent cost, DOE could differentiate among goods and services based on the likelihood that their failure would result in a nuclear incident attributable to that category.24

Fourth “Risk Factor” – Hazards Associated with Covered Installation Outside United States

The fourth risk factor listed in the statute is “the hazards associated with the covered installation outside the United States to which the goods and services are supplied.” 42 U.S.C. §17373(e)(2)(C)(i)(IV). The Department says its current approach would be to interpret this risk factor to mean that risk should be determined based on the hazard associated with the nuclear installation itself, because some nuclear installations bear more risk or hazard of a nuclear incident than others. 75 Fed. Reg. at 43951. This approach sounds reasonable and is in fact the basis of the approach tentatively suggested by CIGNL below under “Possible Risk Allocation Formula”. Again, however, there is no data readily available to identify suppliers of such goods and services to specific foreign installations, particularly since it is not yet known what other States may be Party to the CSC at the time of an accident resulting in a call for international contributions.

Fifth “Risk Factor” – Legal, Regulatory and Financial Infrastructure Associated with Covered Installation Outside United States

The fifth risk factor listed in the statute is “the legal, regulatory, and financial infrastructure associated with the covered installation outside the United States to which the

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24As noted in the paragraph beginning with “Fourth” under “Possible Risk Allocation Formula”, the hazard associated with certain goods and services supplied to a category of facilities as compared to the hazard associated with other goods and services supplied facilities in that category, could be used to allocate among the suppliers to facilities in that category, the liability for the share of the contingent cost to be borne by that category.
goods and services are supplied.” 42 U.S.C. §17373(e)(2)(C)(i)(V). The NOI says the Department recognizes that this type of risk factor may be difficult to assess in a quantitative fashion, but, that, “nevertheless, the statutory language must be given a good-faith reading.” 75 Fed. Reg. at 43951. This factor too may be reasonable, but CIGNL could not reach a consensus on how to implement it at this time.

Sixth “Risk Factor” – Hazards Associated with Particular Forms of Transportation

The sixth risk factor listed in the statute concerns “the hazards associated with particular forms of transportation.” 42 U.S.C. §17373(e)(2)(C)(i)(VI). The NOI says the Department seeks public comment on various factors related to transportation (e.g., routes, transport modes, etc.) or other means to differentiate the hazards associated with particular forms of transportation as well as identifying mitigating factors to appropriately rank risk in its formula. 75 Fed. Reg. at 43951-52. Transportation is not defined in CSC. Consistent with the definition of “Nuclear Damage” in CSC Article I.f.vii, DOE should provide a definition of transportation that recognizes that only transports coming from, or originating, or sent to a nuclear installation are considered a transport under the Act. Thus, transport to a third-party installation outside CSC countries would be excluded, even if subsequently there is a transport from such installation to a covered installation in a CSC country. In assessing the hazards associated with a particular form of transportation, DOE should adopt the principles and methodology that have been used in the formulation of the IAEA transport regulations TSR-1, where safety is inherent in the package independent of the mode of transport.

Excluding Suppliers with “De Minimis” Share

The DOE NOI, 75 Fed. Reg. at 43952, says the Department seeks comments on alternatives, as well as other fair and equitable approaches for excluding `de minimis" suppliers from the CSC cost allocation formula as authorized by the 2007 Act. 42 U.S.C. §17373(e)(2)(C)(ii)(I)(cc). CIGNL is unable to offer a specific view on this point. However, in connection with our comments on the need for a minimum and maximum share to be applied to the allocation applicable to any single nuclear supplier, DOE might consider an approach whereby a supplier would be excluded from the formula if its average revenue from the export of nuclear goods and services over a prescribed period prior to the date of an incident is less than the minimum share.

Possible Risk Allocation Formula

Given the critical difficulties presented by the lack of data on the extent of and risk associated with the export of nuclear goods and services from the United States, CIGNL is unable to offer a specific CSC cost allocation formula. However, we do believe such a formula could be developed, after further data-collection, analysis and consultation with industry, based on certain key principles:

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25 Under the approach discussed under “Possible Risk Allocation Formula”, transportation could be one category, with the risk that a nuclear incident during transportation resulting a call for funds, as measured against the risk that a nuclear incident at a facility in another category resulting in a call for funds, becoming the basis for the share of the contingent cost allocated to the transportation category and its suppliers.
First, the formula should seek to group exporters into categories of goods and services based on the types of facilities that use these goods and services.

Second, each category of facilities should be compared to the other categories to determine which category is most likely to experience a nuclear incident that would result in a call for funds. This assessment should be done by experts in risk assessment. The category with the highest risk of such a nuclear incident should be expected to pay the greatest share of the contingent cost, the category with the second highest risk should be expected to pay the second greatest share and so on.

Third, the calculation of what percentage each category would bear is beyond the scope of this comment, but potentially also could be calculated by experts who are knowledgeable of the facilities in CSC countries falling in each category and the risks of nuclear incidents at such facilities. Such experts, which should include legal counsel, could be engaged at a later stage of this rulemaking in a fully transparent process involving open dialogue and input from various industry sources, and their assessments could be updated as the formula is updated every five years. In any case, we believe that all categories should be assigned at least some risk; and, therefore, some share of the assessment, so that all covered suppliers would have to contribute.

Fourth, companies that supply goods or services to facilities of the type in each category would share liability for the portion of the contingent cost allocated to that category. The allocation of liability could be based on the relative risk associated with the goods or services supplied by each company as compared to the goods or services supplied by others, or, given the complexity of such an assessment, could simply be based on the applicable revenues of such company as a nuclear supplier to facilities in that category located in a CSC country over a period of time prior to the call for funds. Further, in the event of a call for funds, all suppliers to facilities in a category would contribute to the share assigned to their category, even if the covered incident did not occur at a facility in their category.

While cautiously supporting this approach in concept, CIGNL members did not reach a consensus on how the specific categories should be structured, and felt instead that the DOE should study the concept in greater detail as the next phase of this rulemaking. Thus, if the DOE decided to explore the merits of this approach, CIGNL would encourage it to seek comment from industry on the structure of the categories as the next step in its rulemaking process. While we have described in general terms an approach based on relative risk between categories of facilities in CSC countries (e.g., reactors vs. front-end processing facilities), some industry members might prefer to use categories of goods and services, so that the risk analysis would compare the risks of certain types of goods and services compared to other types (e.g., fuel vs. reactor components). However, in all cases, once categories were identified in collaboration with industry, the next step in the process would be to engage experts to develop a rational estimate of the relative risk that a facility in one category would be the source of a nuclear incident resulting in a call for funds under the CSC as compared to the risk of such a call resulting from a nuclear incident at a facility in the other categories.
Minimum and Maximum Shares

Consistent with the terms of Section 934, and the legislative history quoted above, the use of a risk logic does not preclude DOE from adopting principles that will ensure that (i) all companies bear at least some portion of the contingent cost, and (ii) no company bears a disproportionate portion. Thus, the DOE rules should establish a maximum amount (e.g., $5 million) that a company could be liable for, notwithstanding the number of categories in which it was included in (i.e., a company that supplied equipment and services falling into two groups would be subject to the $5 million maximum in terms of capping its maximum liability). In addition, to promote fairness, the formula could impose a minimum liability that should be relatively small (e.g., $100,000). The merit of a figure like $5 million is that, under the provisions of Section 934, the payment of such an amount could be allocated over a five-year period (with interest), thereby rendering yearly payments to a level that most companies could bear. Further, given the very small chance that a covered incident resulting in a call for funds would occur, the exposure to such an amount, spread over five years, even with interest, arguably would not pose a significant burden to trade.

Information Collection Requirements

The key to the efficiency and fairness of any cost allocation formula will be the collection of data to be used to apply to any allocation formula. Use of any or all of the 2007 Act’s listed “risk factors” would require the compilation by DOE of data not currently available. Gathering the necessary data will necessitate creation of a DOE staff to collect and analyze a huge amount of information. An example of export reporting that has been identified is the Department of Agriculture’s (USDA’s) Export Sales Reporting System, which monitors U.S. agricultural exports on a daily and weekly basis. See 7 C.F.R. Part 20. U.S. exporters provide information to USDA on the quantity of their sales transactions, the type and class of commodity, the marketing year and the ultimate destination. About 370 exporters report on a weekly basis via online, fax and e-mail, with approximately 1,300 data entries each week. All data are kept confidential, and released only in aggregate form. The USDA reporting requirements were approved by the Office of Management and Budget, as required by the Paperwork Reduction Act, 44 U.S.C. §§3501 et seq. DOE should consider establishing a similar system, but reporting under the USDA Program appears more straightforward, because the unit of measure used in reporting usually is simply metric tons or pieces (in the case of commodities such as cattle hides). As in the case of the USDA Export Sales Reporting System, 7 C.F.R. §20.7, the DOE CSC contingent cost allocation rule should provide that all data are kept confidential, and released only in aggregate form. For the CSC cost allocation formula, it presumably would be sufficient for data to be reported no more frequently than on an annual basis, which the DOE rule should so provide.

Payments to and by United States

The DOE NOI, 75 Fed. Reg. at 53953, says the Department requests comments on how its regulations may provide clear direction to nuclear suppliers on how, when, and where to make the required deferred payments. A useful example of payment instructions can be found in the

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26 See supra notes 7 to 14 and accompanying text.
27 This amount would represent the amount for which a company might seek insurance.
NRC’s *Material Annual Fee Billing Handbook*, which provides information on alternative payment methods.

**Penalty for Noncompliance**

The DOE NOI, 75 Fed. Reg. at 53953, says the Department solicits comment from the public on how the 2007 Act’s statutory penalty provision, 42 U.S.C. §§17373(h)(3), should be implemented if a nuclear supplier fails to make a required payment and, in particular, what criteria may be appropriate for calculating the penalty amount. 42 U.S.C. §§17373(h)(3)(B) authorizes the Secretary of Energy to recover “any applicable interest on the payment.” CIGNL submits that the amount of interest should be based upon the rate of the current value of funds to the United States Treasury (the Treasury tax and loan account rate) prescribed by the current quarter and published in the Federal Register and the Treasury Financial Manual Bulletins. See 10 C.F.R. §15.37(d) (setting this rate to be used by NRC). 42 U.S.C. §§17373(h)(3)(C) authorizes the collection of a penalty of not more than twice the amount of the deferred payment due from the nuclear supplier. CIGNL submits a possible model is contained in the NRC regulations at 10 C.F.R. §15.37.

**Establishment of Private Insurance**

The DOE NOI, 75 Fed. Reg. at 43952-53, requests comment on what type of information would be necessary to assist the nuclear suppliers and insurers of nuclear suppliers in the establishment of private insurance for the deferred payment. As noted above, the single most important piece of information that DOE can provide is the amount of maximum per company share of the contingent cost that will be imposed on a company regardless of the formula used. Such a maximum share will provide a clearer basis for the industry to discuss with insurers the potential for coverage of individual companies’ risk under the implementing rule.

Even with this information, persuading insurers to provide coverage will not be easy. The DOE NOI says the 2007 Act’s risk factors are “comparable to factors currently used by private insurers to allocate risk.” 75 Fed. Reg. at 43950. While this may be partially true for conventional perils, it is not the case for nuclear risks. First, insurance for nuclear risks cannot be rated as insurance for conventional perils, because there is so little nuclear loss data available. In any case, the threshold issue for any insurance option is knowing what the total U.S. share of the CSC international fund would be and what each individual supplier would be assessed. Without this information, it is not possible to determine how individual insurance premiums would be allocated. Thus, even if an insurance product were made available to the community of suppliers, there currently is no way to allocate individual premiums. Furthermore, discussions with nuclear insurance pools in the United States and abroad have indicated there now is little interest in providing coverage for CSC shares, largely because the CSC covers environmental impairment damages and claims after ten years. These are the insurance coverage issues that continue to...

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28As to environmental damage, the American Nuclear Insurers Facility Form policy applies only to certain “covered environmental cleanup costs,” which are defined as “…only those environmental cleanup costs which are incurred directly for monitoring, testing for, cleaning up, neutralizing or containing environmental damage as the result of an extraordinary nuclear occurrence or transportation incident; but covered environmental cleanup costs do not include on-site cleanup costs.” In other words, the Facility Form excludes such environmental damages as those resulting from a simple “nuclear incident,” those based on an award of damages in an action at law, and those to *res nullius* or *res communis*. “Public liability” is defined in the Price-
delay entry into force of the 2004 amendments to the Paris Convention. Finally, what nuclear liability insurance the pools make available has been reserved for installation operators, because the principle of legal channeling in the international conventions and domestic nuclear liability laws makes operators exclusively liable for nuclear damage claims. The Price-Anderson Act’s economic channeling has the same effect, since only the operator is responsible for providing insurance for “anyone liable” under the Act’s “omnibus” coverage feature.

**Next Steps**

As next steps, CIGNL recommends that the DOE should seek, as an interim measure, further input from industry as to the types of categories that might be used in the type of comparative risk framework described above. Once these categories have been identified, the Department should undertake a detailed study, to be completed prior to the date that the CSC takes effect, to fix the percentages being assigned to these categories during the period covered by the formula. The percentages can be revisited in the future whenever the risk-informed assessment formula is re-determined, as required by Section 934.

After identifying the categories that should be used in the comparative risk assessment described above, the Department should undertake to do the following beginning in 2011:

- DOE should collect data relevant to each category, including by soliciting information and comments from persons or entities who believe they may fall within each category, and by collecting data from public and private sources regarding the history of incidents involving these categories, including any studies by the NRC and others of risks of nuclear incidents at covered installations (which might include installations both in existing CSC countries and also installations in countries likely to sign the CSC in the next five years (i.e., when another formula must be determined)).

- DOE should engage, from government sources (such as the NRC or the national laboratories) or from private and academic sources using DOE’s normal procurement processes or other means, experts to analyze the information, comments, data and studies collected and to analyze the relative risk that a covered incident will occur among the covered installations in each category (as compared to the installations in the other categories). To the extent funds are needed for the purpose of paying for the studies, these can be requested from Congress during 2011 and the work undertaken after the funds are appropriated.

- DOE should provide industry and the public with the preliminary results of the risk analysis for review and comment, including soliciting comments (i) on how difficult it will be for a company or other person or entity to determine which subcategory or subcategories in which it might fall (and which improvements could be made to facilitate identification), and (ii) on what basis the share of the

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Anderson Act as “any legal liability arising out of or resulting from a nuclear incident or precautionary evacuation...” 42 U.S.C. §2210(w).
contingent costs assigned to each category should be allocated among the members of that category (e.g., on the basis of risk or on the basis of a non-risk factor like revenues from sales to covered installations). Individual companies should be invited to submit comments regarding their views on where companies of their type should fall within the categories implicated under the rule.

- DOE should hold at least one public hearing to allow for the presentation of the risk analysis, and the collection of responses from the public on the analysis. Further, to the extent that any of the foregoing is subject to the Administrative Procedure Act, the DOE should make the appropriate announcements and provide for comment periods in accordance with that Act.

After the foregoing analysis is concluded (or while it is being conducted), the Department could issue for review and comment more specific guidance regarding definitions (and in particular persons or goods/services that are excluded from definitions), as discussed above. Once comments have been collected and the risk analysis described above completed, DOE would be in a better position to assert that it has a rational basis for its rule.

CIGNL recognizes that the recommended steps of data collection, analysis, review and comment may be more elaborate than DOE anticipated, but they are necessary prerequisites to ensuring that there is a rational basis for any rule. Further, the requirement imposed by the implementing legislation on DOE is unique and accordingly, significant additional information is needed before DOE can proceed to determine a formula or promulgate a rule. While this will mean that any guidance published by the Department by December 19, 2010 will not answer all questions, CIGNL believes it will be sufficient to meet the statutory requirements and, given that the CSC is not yet in force, will not pose any material issues with respect to implementation of the CSC.

In connection with this effort, CIGNL urges DOE to immediately begin to collect data on the potentially negative impact that the supplementary compensation fund reimbursement scheme will have on the competitive position of domestic nuclear suppliers and potential U.S. jobs. If DOE determines that the implementing rule will undermine the objectives of President’s National Export Initiative or otherwise adversely affect U.S. competitiveness, DOE should report those findings to Congress together with a recommendation to amend the Act to eliminate the burden on industry. At a minimum, DOE may wish to ask Congress to amend the requirement to promulgate a rule to implement the CSC until further study of the issue is completed. Given that the CSC is not yet in force and not likely to come in to force in the immediate term, there is surely time for DOE to do more study before adopting an implementing rule that may hang over the industry as a reason not to export.

Conclusions

CIGNL urges DOE to seek further public comment before completing this CSC contingent cost allocation rulemaking. It already has been over 13 years since the United States signed the CSC, and it still has not entered into force. Other important countries (including Canada, China, India, Japan, and South Korea) have been seriously considering ratifying the
CSC, but are waiting to see how the United States will cover its share of the international fund. On August 3, 2006, the Senate conditioned CSC ratification on the Secretary of State periodically reporting on U.S. diplomatic efforts to encourage other nations to become CSC Contracting Parties. 152 Cong. Rec. S8901. The Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006, Pub. Law 109-401, §103(b)(3)(E), provides it is the policy of the United States to secure India’s ratification of the CSC. Wider acceptance of the CSC remains an important goal. However, the DOE rulemaking should not defeat the global benefits of the CSC by discouraging exports of U.S. nuclear suppliers.